BELDEN

Hirschmann Essentials

Everything you need to build a reliable industrial network.

HIRSCHMANN
A BELDEN BRAND

- DIN Rail Mount Switches
- Rack Mount Switches
- IP65/IP67 Switches
- Industrial Security
- Industrial Wireless
- Software
- System Accessories

Be certain.
Belden.

Industrial Networking Solutions from Belden

Belden has brought together a comprehensive line of industrial cabling, connectivity and networking devices, offering the most reliable communications solutions for your application. Whether you are networking your devices to the controllers, connecting the controllers to the control room, relaying data between the control room, the engineering department, and remote manufacturing sites – or all of the above – Belden has the products you need to seamlessly connect your communications. From the petrochemical, automotive, pharmaceutical, power generation, pulp and paper, metals, food and beverage, or general manufacturing plant to the corporate headquarters – and everywhere in between – Belden has your signal transmission solution. Belden offers the most dependable network and communications system performance in tough and mission-critical environments.

Our Synergy Ensures Continuous Performance

With the Hirschmann product line additions to the Belden offering, our line of complete industrial solutions is uniquely positioned to provide the best network and communications infrastructure possible. Belden products and systems expertise mean that you can maintain ongoing operations without interruption and costly downtime – in any environment. Here are a few more reasons why Belden is your best choice for industrial networking, communications and control:

- We have the expertise to integrate your industrial and commercial networks.
- Our products are engineered to perform in the harshest and most demanding environments.
- We offer the broadest selection of products, for a complete, end-to-end Ethernet solution.
- Our sales and engineering professionals can audit, recommend/design, configure and assemble the products and systems to your specific requirements.
- Our global manufacturing, distribution and support network makes our products and services available to you globally.

Offering Comprehensive Service & Support

Belden recognizes that comprehensive expertise is necessary to ensure an optimized, homogenous solution. We also know that consultation, support and training requires more than just a general understanding of the products, technologies and market trends. It requires a solid understanding of the application and the ability to provide the type of support that is needed – when and where it is needed. It requires the four key service and support areas that are critical to success:

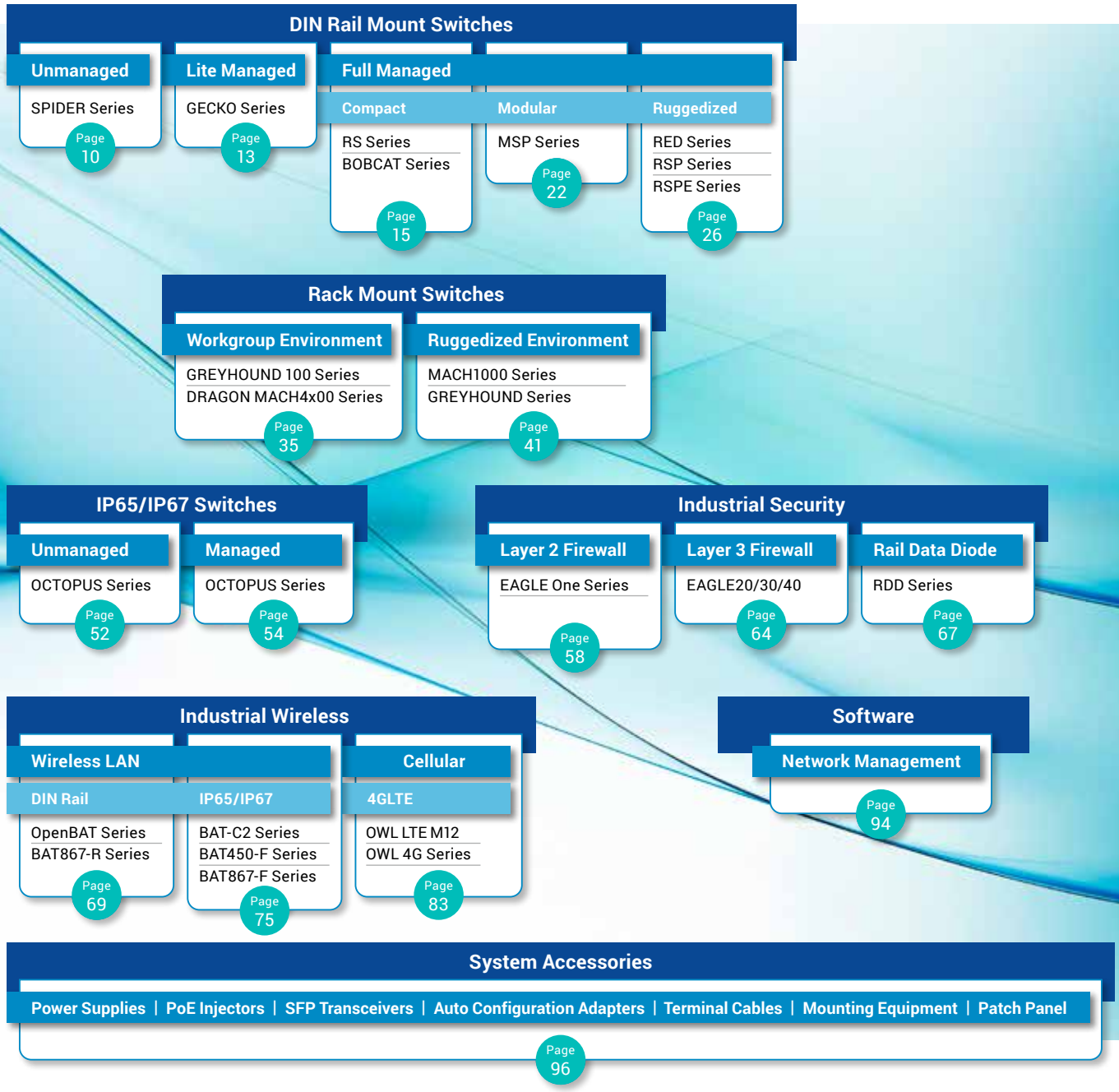
- Network design consulting
- Training
- Technical support
- System performance

Product Selector

Improve productivity and operational efficiency with industry-specific solutions from a brand you trust

To support your business goals, your network demands performance, security, productivity, reliability and efficiency. Hirschmann understands these needs and offers a complete, integrated structure for data communication throughput that truly protects your investment. As the technology and market leader in industrial networking, Hirschmann delivers innovative solutions that are designed and engineered just for you.

Industrial Ethernet Products



Product, Feature and Approval Matrix

	DIN RAIL	PANEL	19" RACK	MAXIMUM DATA SPEED	MAXIMUM PORT DENSITY	UNMANAGED	MANAGED/LAYER 2	MANAGED/LAYER 3 (ROUTING)	12 V DC	24 V DC	36 V DC	48 V DC	110/250 V DC	60/120/250 V DC	24 V AC	110/230 V AC	REDUNDANT POWER INPUTS	PoE (POWER SOURCE)	PoE+ (POWER SOURCE)	PoE (POWERED DEVICE)	PoE+ (POWERED DEVICE)	-40 °C/-40 °F	-20 °C/-4 °F	0 °C/32 °F	50 °C/122 °F	60 °C/140 °F	70 °C/158 °F	85 °C/185 °F	cUL508/cUL61010-1/-2-201	cUL1604/ISA 12.12.01/FM3611 (CLASS 1 DIV 2)	GL (Germanischer Lloyd)	IEC 61850-3 (SUBSTATION)	IEEE 1613 (SUBSTATION)	EN 50155, EN 45545 (RAIL, ONBOARD)	EN 50121-4 (RAIL, TRACK-SIDE)	ATEX 100a, ZONE 2 (HAZARDOUS LOCATION)	cUL60950	TSN Ready	Page
Unmanaged Switches																																							
SPIDER III-Standard Line	●	○	○	G	10	●			●	●								●	●			○	○	●	●	●	●		●										10
SPIDER III-Premium Line	●	○	○	G	26	●			●	●	●	●			●		●					○	○	●	●	●	●		●	●	●	●	●		●	●			10
OCTOPUS		●		G	28	●			●	●	●	●	●*	●		●	●	●	●			○	○	●	●	●	●		●		●			●	●				52
Lite Managed Switch																																							
GECKO	●	○	○	100	5		●		●	●												○	○	●	●	●			●										13
Managed Switches																																							
RS20	●		○	100	25		●		●	●	●	●			●		●	●				○	○	●	●	●	●		●	●	●	●	●		●	●			15
RS30	●		○	G	26		●		●	●	●	●			●		●	●				○	○	●	●	●	●		●	●	●	●	●		●	●			15
RS40	●		○	G	9		●		●	●	●	●			●		●					○	○	●	●	●	●		●	●	●	●	●			●			15
BOBCAT	●		○	2.5G	12		●		●	●	●	●			●		●					○	○	●	●	●	●		●	●					●			●	19
MSP	●		○	10G	28		●	●		●	●	●					●	●	●			○	○	●	●	●	●		●	●	●	●	●		●	●	●		22
RED	●		○	100	4		●	●	●	●	●	●			●		●					○	○	●	●	●	●		●										26
RSP	●		○	G	11		●	●		●	●	●		●		●	●					○	○	●	●	●	●		●	●		●	●		●	●			29
RSPE	●		○	G	28		●	●		●	●	●		●		●	●	●	●			○	○	●	●	●	●		●	●		●	●		●	●		●	32
OCTOPUS		●		G	28		●	●	●	●	●	●	●*	●		●	●	●	●			○	○	●	●	●	●		●		●	●	●		●	●	●	●	54
GREYHOUND100		○	●	10G	30		●	●		●	●	●	●			●	●							●	●	●									●				35
DRAGON MACH4x00		○	●	10G	88		●	●								●	●							●	●	●			●										38
MACH1000		○	●	G	28		●	●		●	●	●	●			●	●	●				○	○	●	●	●	●	●	●	●	●	●	●	●	●				41
GREYHOUND		○	●	2.5G	28		●	●		●	●	●	●	●		●	●	●	●			○	○	●	●	●	●	●	●	●	●	●	●						45
Firewall Systems																																							
EAGLE One	●		●	100	2		●	●	●	●	●	●			●		●					○	○	●	●	●	●		●	●	●	●	●		●	●			58
EAGLE40	●		●	100	2		●			●	●	●					●					○	○	●	●	●			●	●		●	●		●	●			64
EAGLE20/30	●		●	G	7		●	●		●	●	●		●	●	●	●					○	○	●	●	●			●	●	●	●	●		●				61
Rail Data Diode	●		●	100	7		●	●		●			●			●	●					○	○	●	●	●			●					●	●				67
Wireless LAN																																							
OpenBAT	●	○	○	450	2		●	●	●	●	●	●	●	●		●	●			●		○	○	●	●	●			●	●	●	●	●		●	●			69
BAT867-R	●		○	867	1		●	●		●						●	●							●	●	●									●				72
BAT-C2		●		100	1		●	●	●	●												○	○	●	●	●	●		●										78
BAT450-F		●		450	2		●	●		●			●*							●		○	○	●	●	●	●						●			●			80
BAT867-F		●		867	1		●	●		●				●							●	○	○	●	●	●	●							●					75
Industrial Cellular Routers																																							
OWL LTE M12	●	○	○	100	2		●	●	●	●	●										●	○	○	●	●	●	●						●						83
OWL 4G	●	○	○	100	2		●	●	●	●	●										●	○	○	●	●	●	●						●						85

○ ○ **Hollow markers indicate that a non-standard/accessory mounting option is available.**
All DIN rail mount switches can be mounted in a 19" rack by using the Rack Mount Adapter (accessory). The SPIDER and SPIDER III series have mounting options on their housings to enable panel mounting. The RSR has an adapter plate and the MACHs can have their front rack mount flanges turned 90° (additional flanges for rear are available for added support).

●* only 110 V DC

Software Platforms

	GECKO Software	Hirschmann Classic Switch Software	HiOS – Hirschmann Operating System	OWL Software	Classic Firewall Software	HiSecOS – Hirschmann Security Operating System	HiLCOS – Hirschmann WLAN Software	BAT-C2 Software
Lite Managed Switch								
GECKO	●							
Managed Switches								
RS20		●						
RS30		●						
RS40		●						
BOBCAT			●					
MSP			●					
RED			●					
RSP			●					
RSPE			●					
OCTOPUS		●	●					
GREYHOUND100			●					
DRAGON MACH4000			●					
MACH1000		●						
GREYHOUND			●					
Firewall Systems								
EAGLE One					●			
EAGLE 40						●		
EAGLE20/30						●		
Rail Data Diode			●					
Wireless LAN								
OpenBAT							●	
BAT867-R							●	
BAT-C2								●
BAT450-F							●	
BAT867-F							●	
Industrial Cellular Routers								
OWL LTE M12				●				
OWL 4G				●				

HiOS Switch Software – Hirschmann Operating System

Increases the power and performance of managed Hirschmann industrial Ethernet switches

The switch software HiOS is the latest operating system for the new generation of industrial Ethernet devices, combining high performance with robust security. It offers intelligent and unique combinations of various security mechanisms, comprehensive management and diagnostic methods, precise time synchronization and network redundancy protocols to meet every physical and application requirement.

Regular free switch software updates ensure low TCO (total cost of ownership) by continuously providing the latest technology and security functionality. This ensures that your network is always state-of-the-art, while at the same time future-proofing your investment.

The Benefits

Redundancy – an extensive number of standardized and proprietary redundancy mechanisms to meet any requirement

Security – comprehensive security mechanisms protect networks against attacks and operating errors

Ease of Use – an intuitive graphical interface, comprehensive command line interface and full SNMP support meet every management challenge

Markets

- Automation
- Transportation
- Power Transmission & Distribution
- Machine Building

Classic Switch Software

Increase the feature range for the managed Hirschmann Industrial Ethernet switches

Hirschmann provides free of charge software upgrades, ensuring that your device is as state-of-the-art today as when you first installed it. These include security enhancements to the devices running the software, more options for controlling how users can access the network infrastructure devices, as well as functions for restricting access to the network itself.

As industrial networks are growing in size, the Classic Switch Software removes some limitations on network expansion. As customer demand for Power over Ethernet increases, the manual PoE management function ensures that the maximum number of devices can be powered using the available power. The functionality of the Classic Switch Software depends on the hardware. The software offers extensive management, diagnostic and filter functions, as well as various redundancy methods, security mechanisms, real-time applications and ease of use functions which are relevant to all vertical markets.

The Benefits

High network availability – the mechanisms for detecting overload situations offer the option of disabling ports in addition to various filter functions

Enhanced network security – more options for controlling how users can access the network infrastructure devices, as well as functions for restricting access to the network itself

PoE management functions – the amount of power delivered to an end device can be manually configured

Markets

- Power Transmission & Distribution
- Automation
- Machine Building
- Transportation
- Oil & Gas

Security Software

Classic Firewall Software

The Classic Firewall Software offers a large range of protection functionalities for virtually every design of network. Moreover, the Firewall Learning Mode provides an expedited deployment of firewall rules for bridged or routed communications. For high availability networks, the software offers redundancy at both Layer 2 and Layer 3 and firewall state entries are automatically synchronized.

HiSecOS - Hirschmann Security Operating System

HiSecOS is the latest operating system for Industrial Security Routers, combining performance with robust security. It provides the user with comprehensive security mechanisms to protect networks against attacks and operating errors.

Designed to fulfill the requirements of the IEEE1686 standard, functions such as audit trail and user management with password policies are implemented right from the beginning.

The Benefits

Redundancy – router redundancy with L3 VRRP and L2 RSTP protocols

Security – state-of-the-art cybersecurity with IPSec VPN encryption and stateful L3 firewall with Deep Packet Inspection capabilities

Ease of Use – graphical and intuitive user interface with firewall assistance mode, test mode and inbuilt syslog and packet capture functionality

Markets

- Automation
- Transportation
- Power Transmission & Distribution
- Machine Building

HiLCOS – Hirschmann WLAN Software

Designed to enable maximum stability for reliable and secure wireless connections in industrial applications

HiLCOS is the operating system for Hirschmann's OpenBAT, BAT867-R and BAT450-F industrial WLAN devices. It is the driving force behind many of today's critical wireless installations: Whether it is a Metro in a city that needs connectivity to the control room or a robot in a factory that needs to read out safety sensors over WiFi.

The software offers features well beyond basic WLAN functions and the latest updates are based on more than 20 years of continuous development and improvement by Belden and Hirschmann experts.

The improved WIDS (Wireless Intrusion Detection System) hardens the network against malicious attacks and provides the flexibility of configuring and monitoring the WIDS functionality from the Wireless LAN Controller.

WiFi is a critical part of each network and our HiLCOS operating system can be configured to fit even the most demanding application. We know that making WiFi successful requires a complete understanding of all the data that needs to be delivered and how WiFi can be shaped to fit its requirements.

The option of monitoring wireless links reduces troubleshooting time and optimizes network performance and quality. An enterprise-grade SiteSurvey is not enough for demanding industrial applications. Sometimes, for example, it is necessary to check the signal strength in total and each antenna individually. The insights we gain from our most demanding projects are implemented and made available to all customers.

The WiFi world is demanding and we have the features to meet it: Multi-user Layer 2 (PLC communication), redundant transmission over two channels (PRP), inter-vendor roaming optimizations and mesh networking.

The Benefits

Enhanced security – systems and features to protect WLAN networks from new threats, identify the intruder and provide configuration scalability

Roaming enhancements – new features to reduce roaming handover time

Rugged mesh – industrial grade mesh on multiple frequencies and with a very fast failover mechanism

Markets

- Automation
- Transportation
- Power Transmission & Distribution
- Oil & Gas
- Renewable Energy
- Hazardous Environments
- Machine Building

SPIDER III Unmanaged DIN Rail Fast/Gigabit Ethernet Switches

Select a Standard or Premium Line unmanaged switch to meet your needs

Reliably transmit large amounts of data across any distance with the SPIDER III family of industrial Ethernet switches. These unmanaged switches have plug-and-play capabilities to allow for quick installation and startup - without any tools - to maximize uptime. Whether you need a cost-effective, entry-level switch - or something more robust, with many customizable features - the SPIDER III Standard Line or the SPIDER III Premium Line will meet your network's unique needs.

The Premium Line switches expand on the benefits of the Standard Line offerings by adding configurable switch functionality typically only found in managed switches. Plus, you'll find additional hardware options and expanded industrial certifications for broader deployment in what matters – your applications.

The Benefits

Compact design – small size saves space in tight areas and makes installation simple and fast

Future-proof – high data throughput achieved by Gigabit data speeds, while fiber communication options ensure long-term scalability

Cost-effective – reduces overall lifecycle costs with low power consumption

Increase performance – with PoE+ for greater power to more devices, without an external power supply

Easy to customize – configure some switching parameters via a USB port by utilizing an easy-to-use, free software tool

Highly ruggedized – built to withstand extreme industrial environments through an IP40 metal case and an optional protective coating

Expanded industrial certifications – approved for use in a variety of industrial markets

Markets

- Manufacturing
- Machine Building
- Transportation
- Automotive
- Process Automation
- Physical Security

Standard Variants

Part Number	Type	Product Description
942 132-001	SSL20-5TX	5 x FE TX, 12-24 V DC, 0 °C to +60 °C
942 132-002	SSL20-8TX	8 x FE TX, 12-24 V DC, 0 °C to +60 °C
942 132-004	SSL40-8TX	8 x GE TX, 12-24 V DC, 0 °C to +60 °C
942 132-005	SSL20-1TX/1FX	1 x FE TX, 1 x FE FX, 12-24 V DC, 0 °C to +60 °C
942 132-006	SSL20-1TX/1FX-SM	1 x FE TX, 1 x FE FX-SM, 12-24 V DC, 0 °C to +60 °C
942 132-007	SSL20-4TX/1FX	4 x FE TX, 1 x FE FX, 12-24 V DC, 0 °C to +60 °C
942 132-009	SSL20-4TX/1FX-SM	4 x FE TX, 1 x FE FX-SM, 12-24 V DC, 0 °C to +60 °C
942 132-012	SSL20-6TX/2FX	6 x FE TX, 2 x FE FX, 12-24 V DC, 0 °C to +60 °C
942 132-015	SSL40-6TX/2SFP	6 x GE TX, 2 x GE SFP, 12-24 V DC, 0 °C to +50 °C
942 141-017	SPL20-8TX-EEC	8 x FE TX, 12-24 V DC, -40 °C to +70 °C
942 141-024	SPL20-4TX/1FX-EEC	4 x FE TX, 1 x FE FX, 12-24 V DC, -40 °C to +70 °C
942 141-026	SPL20-4TX/1FX-SM-EEC	4 x FE TX, 1 x FE FX-SM, 12-24 V DC, -40 °C to +70 °C
942 141-030	SPL20-7TX/2FX-EEC	7 x FE TX, 2 x FE FX, 12-24 V DC, -40 °C to +70 °C
942 141-117	SPL20-8TX-EEC-HL	8 x FE TX, 12-24 V DC, -40 °C to +70 °C
942 141-125	SPL20-4TX/1FX-ST-EEC-HL	4 x FE TX, 1 x FE FX, 12-24 V DC, -40 °C to +70 °C
942 059-001	SPIDER Giga 2TX PoE EEC	2 x GE TX PoE+, -40 °C to +70 °C

Technical Information

Product Description		
Type	**SPIDER III Standard Line**	**SPIDER III Premium Line**
Description	Unmanaged, Industrial ETHERNET Rail Switch, fanless design, PoE+, IP30 plastic housing/metal housing	Unmanaged, configurable Industrial ETHERNET Rail Switch, fanless design, USB port for configuration, IP40 metal housing
Port Type and Quantity*	Up to 10 x FE or GE ports, thereof max. 2 x FE or GE FX ports	Up to 26 x FE or 8 x GE ports, thereof max. 3 x FE or 2 x GE FX ports
Power over Ethernet (PoE)*	Up to 8 x GE PoE+ ports, 120 W total power budget	
Interfaces		
USB Interface		1 x USB for configuration
Power Requirements		
Operating Voltage*	12 - 24 V DC, 12 - 57 V DC	12 - 48 V DC and 24 V AC (redundant power input)
Power Consumption (without PoE)*	1.3 to 13.3 W	2.4 to 9.0 W
Ambient Conditions		
Operation Temperature*	0 °C to +60 °C, -40 °C to +70 °C	-40 °C to +70 °C
Conformal Coating		Optional
Mechanical Construction		
Dimensions (W x H x D)*	26/38 x 102 x 79 mm, 45 x 110 x 88 mm (w/o terminal block)	39/49/56/61 x 135/164 x 117/122 mm (w/o terminal block)
Weight*	100 g to 970 g	400 g to 1140 g
Protection Class	IP30 (plastic housing and metal housing)	IP40 (metal housing)
Service		
Configurable Parameters		Global settings: power supply unit alarm, aging time, QoS 802.1p mapping, QoS DSCP mapping Port settings: flow control, port state, broadcast mode/threshold, multicast mode/threshold, QoS Trust Mode, port priority, link alarm TX port settings: auto-negotiation, speed, duplex mode, auto-crossing, MDI state, energy efficient Ethernet FX port settings: duplex mode
Approvals		
Safety of Industrial Control Equipment*	cUL 61010-1/61010-2-201	
Hazardous Locations*		IECEx Zone 2, ISA12.12.01 class 1 div. 2, ATEX Zone 2
Ship*		DNVGL
Transportation*	EN 50121-4*	EN 50121-4, E1
Substation*		EN 61850-3, IEEE 1613

* Depending on the selected variant

NOTE: Did not find a suitable product?
Please visit our website for more configurations and the complete technical specifications: SPIDER III Series

SPIDER III Standard and Premium Line Switch Configurations

Configurator

catalog.belden.com

S	P	I	D	E	R	-	P	L	-	2	0	-	0	8	T	1	9	9	9	9	9	9	T	Z	9	H	H	H	H

Design

SPIDER-SL-20 =Standard Line Fast Ethernet Ports
SPIDER-SL-24 =Standard Line Fast Ethernet PoE/PoE+ Ports
SPIDER-SL-40 =Standard Line Gigabit Ethernet Ports
SPIDER-SL-44 =Standard Line Gigabit Ethernet PoE/PoE+ Ports
SPIDER PL-20 =Premium Line Fast Ethernet Ports
SPIDER PL-30 =Premium Line Fast & Gigabit Ethernet Ports
SPIDER PL-40 =Premium Line Gigabit Ethernet Ports

Number of Copper Ports

01T1 = 1 x Twisted-Pair, RJ45
0411 = 4 x Twisted-Pair, R145
05T1 = 5 x Twisted-Pair, RJ45
06T1 = 6 x Twisted-Pair, RJ45
07T1 = 7 x Twisted-Pari, RJ45
08T1 = 8 x Twisted-Pair, RJ45
16T1 = 16 x Twisted-Pair, RJ45
22T1 = 22 x Twisted-Pair, RJ45
24T1 = 24 x Twisted-Pair, RJ45

Type 1 Fiber Port

O6 = SFP Slot (100/1000 Mbit/s)
Z6 = SFP Slot (100 Mbit/s)
S2 = Singlemode, SC (100 Mbit/s)
M2 = Multimode, SC (100 Mbit/s)
M4 = Multimode, ST (100 Mbit/s)
99 = Empty

Type 2 Fiber Port

O6 = SFP Slot(100/1000 Mbit/s)
Z6 = SFP Slot (100 Mbit/s)
S2 = Singlemode, SC (100 Mbit/s)
M2 = Muitimode, SC (100 Mbit/s)
99 = Empty

Type 3 Fiber Port

Z6 = SFP Slot (100 Mbit/s)
99 = Empty

Temperature Range

S = 0°C to + 60°C
T = -40 °C to + 70 °C
E = -40°C to + 70°C inclusive Conformal Coating

Approvals

Z9 = CE, FCC, EN 61131, EN 60950
Y9 = CE. FCC, EN 61131, EN 60950, cUL61010
X9 = CE FCC. EN 61131, EN 60950, cUL61010, ISA12.12.01 C1D2
W9 = CE, FCC, EN 61131, EN 60950, ATEX Zone 2
UY = CE, FCC, EN 61131, EN 60950, cUL61010, DNVGL
TY = CE, FCC, EN 61131, EN 60950, cUL61010, EN 50121-4
R9 = CE, FCC, EN 61131, EN 60950, e1
WV = CE, FCC, EN 61131, EN 60950, cUL61010, ISA12.12.01 C1D2, ATEX Zone 2, DNVGL, EN 50121-4, e1
WW = CE, FCC, EN 61131, EN 60950, cUL61010, ISA12.12.01 C1D2, ATEX Zone2, DNVGL, EN 50121-4, IEC 61850-3, IEEE 1613

Customization

HK = Plug-in Terminal Block with Spring Clamps
HH = Standard

Configuration

HV = Extended Voltage Range: 12/24/48 V DC, 24 V AC
HH = Standard Voltage Range: 12/24 V DC

Lite Managed Industrial DIN Rail Fast Ethernet Switches – GECKO

Designed with functional essentials in mind, while also offering enhancements for redundancy and diagnostics

Although these "lightly" managed switches stand out with their simplicity, they also offer functionalities that enable more advanced capabilities than available with unmanaged devices. These include redundancy functionality for a high reliability of the network and fast and simple error diagnosis for higher machine uptime and smooth production workflows.

Furthermore, it is possible to turn off unused ports to prevent unwanted connections that may cause harm to your network. Finally, the GECKO switches help you to get more status information from your network through easy-to-implement management functionality.

The Benefits

Reduced life cycle costs – thanks to an outstanding value and low operating costs

Environmentally friendly – due to low power consumption of less than 3W

Fit into tight spaces – thanks to a compact housing that makes them one of the smallest industrial Ethernet switches on the market

High network availability – thanks to simple commissioning through an intuitive web interface, or by utilizing the HiView configuration tool and Industrial HiVision network management software

Markets

- Machine Building
- Renewable Energy
- Process Automation
- Automotive
- Food & Beverage
- Material Handling

Technical Information

Product Description				
Type	**GECKO 4TX**	**GECKO 5TX**	**GECKO 8TX**	**GECKO 8TX/2SFP**
Description	Lite Managed Industrial ETHERNET Rail-Switch, Ethernet/Fast-Ethernet Switch with Gigabit Uplink, Store and Forward Switching Mode, fanless design			
Port Type and Quantity	4 x 10BASE-T/100BASE-TX, TP-cable, RJ45 sockets, auto-crossing, auto-negotiation, auto-polarity	5 x 10BASE-T/100BASE-TX, TP-cable, RJ45-sockets, auto-crossing, auto-negotiation, auto-polarity	8 x 10BASE-T/100BASE-TX, TP-cable, RJ45-sockets, auto-crossing, auto-negotiation, auto-polarity	8 x 10BASE-T/100BASE-TX, TP-cable, RJ45-sockets, auto-crossing, auto-negotiation, auto-polarity, 2 x 100/1000 MBit/s SFP
Order No.	942 104-003	942 104-002	942 291-001	942 291-002
More Interfaces				
Power Supply/Signaling Contact	1 plug-in terminal block, 3-pin			
Network Size – Length of Cable				
Twisted Pair (TP)	0 - 100 m			
Network Size – Cascadibility				
Line-/Star Topology	Any			
Power Requirements				
Operating Voltage	12/24 V DC (9.6 to 32 V DC)			
Software				
Management	HTML5 Web-Interface, TFTP config file/firmware transfer, SNMP V1/V2/V3			
Diagnose	Device status indication (LEDs), Log-File, RMON (1) statistics, Simple interface statistics, Topology Discovery according to IEEE 802.1AB (LLDP), Port Mirroring 1:1, Syslog			
Configuration	BOOTP/DHCP, HiDiscovery			
Security	SNMPv3 (authNoPriv), Possibility to disable each port, SSH, SSL, MAC-Based Port Security			
Redundancy Functions	RSTP (IEEE 802.1D-2004), MRP*			
Filter	TOS/DSCP prioritization (Mapping TOS/DSCP to 802.1D/p), QoS (4 queues), Static unicast/multicast filter entries (up to 100), VLAN*, IGMP Snooping*, Flow Control			
Industrial Protocols*	PROFINET, Ethernet/IP			
Time Synchronization*	SNTP Client			
Secure Remote Access	SiteManager GECKO			
Ambient Conditions				
Operating Temperature	0 °C to +60 °C		-40 to +60 °C **	
Storage/Transport Temperature	-40 °C to +85 °C			
Relative Humidity (non-condensing)	5% to 95%			
Mechanical Construction				
Mounting	DIN Rail			
Protection Class	IP30			
Dimensions (W x H x D)	25 mm x 114 mm x 79 mm (w/o terminal block)		38 x 102 x 79 mm (w/o terminal block)	
Weight	103 g	110 g	203 g	223 g
Approvals				
Safety of Industrial Control Equipment	cUL 61010-1 (previously cUL 508)			
Reliability				
Warranty	5 years (standard)			
Scope of Delivery and Accessories				
Scope of Delivery	Device, terminal block, start-up instructions			
Accessories to Order Separately	Rail power supply RPS 30, RPS 80 EEC or RPS 120 EEC (CC), Fast Ethernet SFP Transceivers, Fast Ethernet Bi-Directional SFP Transceivers, Gigabit Ethernet SFP Transceivers, Gigabit Ethernet Bi-Directional SFP Transceivers , Mounting Accessories			

* Pre-configuration options
** Temperature derating depending on used SFP. More information can be found in the manual.

NOTE: These are the prominent technical specifications. For complete technical specifications visit www.hirschmann.com

RS20/RS30/RS40 Full Managed Industrial DIN Rail Ethernet Switches

Provide an optimum degree of flexibility with several thousand versions

For Fast Ethernet networks, choose the hardened, compact RS20 switches. These managed industrial DIN Rail switches can accommodate from 4 to 25 ports and are available with different Fast Ethernet uplink ports – all copper or 1, 2 or 3 fiber ports. The fiber ports are available in multimode and/or singlemode.

In networks that combine Fast and Gigabit Ethernet speeds, select the RS30 switches. These hardened compact managed industrial DIN Rail switches accommodate from 8 to 24 ports with 2 Gigabit ports with Twisted Pair RJ45 or SFP slots and 8, 16 or 24 Fast Ethernet ports.

Thanks to Power over Ethernet (PoE) options, terminal equipment can also be powered cost-effectively.

If you're running a Full Gigabit network, select the switches from the RS40 family. Hardened, compact and DIN Rail mounted, these industrial managed switches offer 9 Gigabit ports with 5 x Twisted Pair ports RJ45 and 4 x Twisted Pair ports RJ45/SFP combo ports (function of one RJ45 combo port is lost for each SFP utilized).

Fiber uplink ports are available in multimode and/or single mode by using Gigabit or 100 Mbit/s SFP transceivers.

The Benefits

Vast portfolio – these switches provide an optimum degree of flexibility with several thousand versions. You can choose one of our most common or you can easily customize a switch to your environment

Versatile – satisfies a broad range of application scenarios with industry-specific certifications, fanless design and compact DIN Rail metal or plastic housing

High network and data security – thanks to fast redundancy protocols and multiple security mechanisms as well as various different functions for convenient configuration and diagnostics

Easy configuration and diagnostics – thanks to comprehensive management functions

Markets

- Machine Building
- Automotive
- Transportation
- Power Transmission & Distribution
- Oil & Gas

Standard Variants

Part Number	Type	Product Description
943 434-021	RS20-0800T1T1SDAEHH	8 x FE TX, 12-24 V DC, 0 °C to +60 °C, Classic L2E
943 434-003	RS20-0800M2M2SDAEHH	6 x FE TX, 2 x FE FX, 12-24 V DC, 0 °C to +60 °C, Classic L2E
943 935-001	RS40-0009CCCCSDAEHH	4 x Gig Combo, 5 x Gig TX, 12-24 V DC, 0 °C to +60 °C, Classic L2E
943 434-031	RS30-0802O6O6SDAEHH	2 x Gig SFP, 8 x FE TX, 12-24 V DC, 0 °C to +60 °C, Classic L2E
943 434-019	RS20-0800S2S2SDAEHH	6 x FE TX, 2 x FE FX-SM, 12-24 V DC, 0 °C to +60 °C, Classic L2E
943 434-004	RS20-0800M2M2SDAPHH	6 x FE TX, 2 x FE FX, 12-24 V DC, 0 °C to +60 °C, Classic L2P
943 434-023	RS20-1600T1T1SDAEHH	16 x FE TX, 12-24 V DC, 0 °C to +60 °C, Classic L2E
943 434-032	RS30-0802O6O6SDAPHH	2 x Gig SFP, 8 x FE TX, 12-24 V DC, 0 °C to +60 °C, Classic L2P
943 434-005	RS20-1600M2M2SDAEHH	14 x FE TX, 2 x FE FX, 12-24 V DC, 0 °C to +60 °C, Classic L2E

Technical Information

Product Description					
Type	**RS20**	**RS30**	**RS40**	**RS22**	**RS32**
Description	Managed, Industrial ETHERNET Rail Switch, fanless design, IP20 plastic housing	Managed, Industrial ETHERNET Rail Switch, fanless design, IP20 plastic housing	Managed, Industrial ETHERNET Rail Switch, fanless design, IP20 plastic housing	Managed, Industrial ETHERNET Rail Switch, fanless design, PoE ports, IP20 metal housing	Managed, Industrial ETHERNET Rail Switch, fanless design, PoE ports, IP20 metal housing
Port Type and Quantity*	Up to 25 x FE ports, thereof max. 3 x FE FX ports	Up to 24 x FE and 2 x GE ports, thereof max. 4 x FX ports	9 x GE ports, thereof 4 x GE combo ports	Up to 25 x FE ports, thereof max. 3 x FE FX ports	Up to 24 x FE and 2 x GE ports, thereof max. 4 x FX ports
Power over Ethernet (PoE)				4 x FE PoE ports, 60 W total power budget	
Interfaces					
V.24 Interface	1 x RJ11 socket				
USB Interface	1 x USB (ACA21-USB adapter)				
Power Requirements					
Operating Voltage	12 - 48 V DC and 24 V AC (redundant power input)			48 V DC (redundant power input)	
Power Consumption (without PoE)*	5.3 to 16.4 W	8.9 to 19.5 W	20 W	5.3 to 16.4 W	8.9 to 19.5 W
Ambient Conditions					
Operation Temperature*	0 °C to +60 °C, -40 °C to +70 °C				
Conformal Coating	Optional				
Mechanical Construction					
Dimensions (W x H x D)*	47/74/110 x 131 x 111 mm	74/110 x 131 x 111 mm		90/120 x 137 x 115 mm	
Weight*	400 g to 650 g	410 g to 650 g	530 g to 600 g	820 g to 1200 g	
Protection Class	IP20 plastic housing			IP20 metal housing	
Software					
Supported Software Levels*	Classic Software Layer 2 Enhanced (L2E), Layer 2 Professional (L2P)				
Approvals					
Safety of Industrial Control Equipment*	cUL 508				
Hazardous Locations*	IECEx Zone 2, ISA12.12.01 class 1 div. 2, ATEX Zone 2				
Ship*	DNVGL				
Transportation*	NEMA TS2, EN50121-4				
Substation*	IEC 61850-3, IEEE 1613				

* Depending on the selected variant

NOTE: Did not find a suitable product?
Please visit our website for more configurations and the complete technical specifications: RS20/RS30/RS40 Series

RS20/RS22/RS30/RS32 Compact OpenRail Ethernet Switch Configurations

Fast Ethernet Uplink Ports/Fast Ethernet Uplink Ports with PoE
Gigabit Ethernet Uplink Ports/Gigabit Ethernet Uplink Ports with PoE

Configurator

catalog.belden.com

R	S	3	2	-	1	6	0	2	O	O	Z	Z	S	P	A	P	H	F	X	X	.	X

Design/Models

RS20 = Fast-Ethernet Uplink Ports
RS22 = Fast- Ethernet Uplink Ports with PoE
RS30 = Gigabit Ethernet Uplink Ports
RS32 = Gigabit Ethernet Ports with PoE

Fast Ethernet Ports

04 = 4 X 10/100 Mbit/s
08 = 8 x 10/100 Mbit/s
09 = 9 x 10/100 Mbit/s
16 = 16 x 10/100 Mbit/s
17 = 17 x 10/100 Mbit/s
24 = 24 x 10/100 Mbit/s
25 = 25 x 10/100 Mbit/s

Gigabit Ethernet Ports

00 = None (not present)
02 = 2 x 1000 Mbit/s

Type 1 Uplink Port

T1 = 1 x Twisted-Pair RJ45
M2 = 1 x Multimode SC
M4 = 1 x Multimode ST
S2 = 1 x Singlemode SC
S4 = 1 x Singlemode ST
L2 = 1 x LongHaulSC
G2 = 1 x LongHaul + SC
E2 = 1 x Singlemode + SC
EE = 2 x Singlemode + SC
06 = 1 x SFPSlotGE
OO = 2 x SFP Slots GE
MM = 2 x Multimode SC
NN = 2 x Multimode ST
VV = 2 x Singlemode S
UU = 2 x Singlemode ST

Type 2 Uplink Port

T1 = 1 x Twisted-Pair RJ45
M2 = 1 x Multimode SC
M4 = 1 x Multimode ST
E2 = 1 x Singlemode+ SC
S2 = 1 x Singlemode SC
S4 = 1 x Singlemode ST
L2 = Singlemode Long Haul FX DSC (only 100 Mbit/s)
G2 = Singlemode Long Haul FX DSC 200 km (only 100 Mbit/s)
06 = SFP slot (only 1000 Mbit/s)
ZZ = 2 x SFP Slots FE

Temperature Range

S = 0°C to + 60°C
T = -40°C to + 70°C(+60°CPoE)
E = -40°C to + 70°C (+60°C PoE) inclusive Conformal Coating

Power Supply

D = 9.6 to 60 V DCand18 to 30 V AC
P = 47 to 52 V DC(PoE)

Approvals

A = cUL508, cUL1604 Class 1 Div 2
H = cUL508, cUL1604, Class 1 Div 2 Germanischer Lloyd, IEC 61850-3: Substation, IEEE 1613: Substation - EN 50121-4: Railway (track)
B = cUL508, cUL1604, Class 1 Div 2, Germanischer Lloyd, IEC 61850-3: Substation, IEEE 1613: Substation - EN 50121-4: Railway (track)/ATEX 100a, Zone 2: Hazardous Location

Software Version

E = Enhanced, additional filters and redundancy
P = Professional, DHCP server, additional security and diagnostics, advanced filtering and redundancy
U = Unmanaged

Configuration

H = Standard
E = EtherNet/IP Pre Settings
P = PROFINET Pre Settings

OEM Type

H = Standard
F = Steel Cabinet(PoE)
V = Improved shock resistant
X = Customer Specific

Software Release

XX.X = Current Software Release

NOTE: The last three part number categories (Configuration, OEM Type and Software Release) are optional.

RS40 Compact OpenRail Managed Ethernet Switch Configurations

Full Gigabit Ethernet Switches RS40

Configurator

catalog.belden.com

R	S	4	0	-	0	0	0	9	C	C	C	C	S	D	-	A	P	E	H	X	X	.	X

Design/Model

RS40 = Full Gigabit Ethernet Switch

Fast Ethernet Port

00 = 0 x 10/100 Mbit/s

Gigabit Ethernet Ports

09 = 9 x 1000 Mbit/s

Type 1 Uplink Port

CC = 2 x SFP Combo Port GE

Type 2 Uplink Port

CC = 2 x SFP Combo Port GE

Temperature Range

S = 0°C to + 60°C

T = -40°C to + 70°C inclusive Conformal Coating

E = -40°C to + 70°C inclusive Conformal Coating

Power Supply

D = 9.6 to 60 V DC and 18 to 30 V AC

Approvals

A = cUL508, cUL1604 Class 1 Div 2

H = cUL508, cUL1604, Class 1 Div 2, Germanischer Lloyd, IEC 61850-3: Substation/IEEE 1613: Substation - EN 50121-4: Railway (track)

B = cUL508, cUL1604, Class 1 Div 2, Germanischer Lloyd, IEC 61850-3: Substation IEEE 1613: Substation - EN 50121-4: Railway (track), ATEX 100a, Zone 2: Hazardous Location

Software Version (see page 12- 15 for additional Management Software Functionality details)

E = Enhanced, additional filters and redundancy

P = Professional, DHCP server, additional security and diagnostics, advanced filtering and redundancy

Configuration

H = Standard

E = EtherNet/IP Pre Settings

P = PROFINET Pre Settings

OEM Type

H = Standard

Software Release

XX.X = Current Software Release

NOTE: The last three part number categories (**Configuration, OEM Type** and **Software Release**) are optional.

BOBCAT Managed Industrial DIN Rail Fast/Gigabit Ethernet Switches

Get ready for the next generation network through Time Sensitive Networking (TSN) technology on all ports

The BOBCAT Switch is the first of its kind to enable real-time communication using TSN. Industrial applications require this capability to maximize performance, especially when under demanding conditions.

To effectively support the increasing real-time communication requirements in industrial settings, a strong Ethernet network backbone is essential. These compact managed switches allow for expanded bandwidth capabilities by adjusting your SFPs from 1 to 2.5 Gigabit – requiring no change to the appliance.

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

Enhanced network security is another critical component of any future-facing network. The BOBCAT Switches support HiOS software and feature several compelling security elements.

The Benefits

Ready for next generation network – with increased bandwidth and speed capabilities

Real-time TSN Ethernet – support for precise data transmission on all ports

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 100MB/s, 1 Gigabit and 2.5 Gigabit speeds

Additional interface options – through digital input for more flexibility

Robust industrial design – reinforces the switch's resistance against harsh conditions

Markets

- Automotive
- Manufacturing
- Machine Building
- Water Management
- Security
- Consumer Packaged Goods
- Oil & Gas

Standard Variants

Part Number	Type	Product Description
942 170-001	BRS20-4TX	4 x FE TX, 12-24 V DC, 0 °C to +60 °C, HiOS L2S
942 170-002	BRS20-8TX	8 x FE TX, 12-24 V DC, 0 °C to +60 °C, HiOS L2S
942 170-003	BRS20-4TX/2FX	4 x FE TX, 2 x FE FX, 12-24 V DC, 0 °C to +60 °C, HiOS L2S
942 170-004	BRS20-8TX/2FX	8 x FE TX, 2 x FE FX, 12-24 V DC, 0 °C to +60 °C, HiOS L2S
942 170-005	BRS20-4TX/2FX-SM	4 x FE TX, 2 x FE FX-SM, 12-24 V DC, 0 °C to +60 °C, HiOS L2S
942 170-006	BRS20-8TX/2FX-SM	8 x FE TX, 2 x FE FX-SM, 12-24 V DC, 0 °C to +60 °C, HiOS L2S
942 170-021	BRS20-4TX/2SFP	4 x FE TX, 2 x FE SFP, 12-24 V DC, 0 °C to +60 °C, HiOS L2S
942 170-007	BRS30-8TX/4SFP	4 x Gig SFP, 8 x FE TX, 12-24 V DC, 0 °C to +60 °C, HiOS L2S
942 170-008	BRS40-8TX	8 x Gig TX, 12-24 V DC, 0 °C to +60 °C, HiOS L2S
942 170-009	BRS40-8TX/4SFP	4 x Gig SFP, 8 x Gig TX, 12-24 V DC, 0 °C to +60 °C, HiOS L2S
942 170-010	BRS50-8TX/4SFP	4 x 2.5 Gig SFP, 8 x Gig TX, 12-24 V DC, 0 °C to +60 °C, HiOS L2S
942 170-011	BRS20-4TX-EEC	4 x FE TX, 12-24 V DC, -40 °C to +70 °C, HiOS L2S
942 170-012	BRS20-8TX-EEC	8 x FE TX, 12-24 V DC, -40 °C to +70 °C, HiOS L2S
942 170-013	BRS20-4TX/2FX-EEC	4 x FE TX, 2 x FE FX, 12-24 V DC, -40 °C to +70 °C, HiOS L2S
942 170-014	BRS20-8TX/2FX-EEC	8 x FE TX, 2 x FE FX, 12-24 V DC, -40 °C to +70 °C, HiOS L2S
942 170-015	BRS20-4TX/2FX-SM-EEC	4 x FE TX, 2 x FE FX-SM, 12-24 V DC, -40 °C to +70 °C, HiOS L2S
942 170-016	BRS20-8TX/2FX-SM-EEC	8 x FE TX, 2 x FE FX-SM, 12-24 V DC, -40 °C to +70 °C, HiOS L2S
942 170-022	BRS20-4TX/2SFP-EEC	4 x FE TX, 2 x FE SFP, 12-24 V DC, -40 °C to +70 °C, HiOS L2S
942 170-017	BRS30-8TX/4SFP-EEC	4 x Gig SFP, 8 x FE TX, 12-24 V DC, -40 °C to +70 °C, HiOS L2S
942 170-018	BRS40-8TX-EEC	8 x Gig TX, 12-24 V DC, -40 °C to +70 °C, HiOS L2S
942 170-019	BRS40-8TX/4SFP-EEC	4 x Gig SFP, 8 x Gig TX, 12-24 V DC, -40 °C to +70 °C, HiOS L2S
942 170-020	BRS50-8TX/4SFP-EEC	4 x 2.5 Gig SFP, 8 x Gig TX, 12-24 V DC, -40 °C to +70 °C, HiOS L2S

Technical Information

Product Description				
Type	**BRS20**	**BRS30**	**BRS40**	**BRS50**
Description	Managed, Industrial Ethernet Switch DIN Rail, fanless design			
Port Type and Quantity*	Up to 24 x FE ports, thereof max. 4 x FE FX ports	Up to 20 x FE and 4 x GE ports, thereof max. 4 x FE/GE SFP ports	Up to 24 x GE ports, thereof max. 4 x FE/GE SFP ports	Up to 24 x GE ports, thereof max. 4 x FE/GE/2.5GE SFP ports
Interfaces				
USB Interface	USB-C for local management and device replacement			
Digital Input	1 x plug-in terminal block, 2-pin			
Power Requirements				
Operating Voltage*	12 - 24 V DC, 24 - 48 V DC and 24 V AC (redundant power input)			
Power Consumption*	5 to 12 W			
Ambient Conditions				
Operation Temperature*	0 °C to +60 °C, -40 °C to +70 °C			
Conformal Coating	Optional			
Mechanical Construction				
Dimensions (W x H x D)*	69/85 x 140 x 110 mm metal housing, 57/73 x 138 x 109 mm plastic housing			
Weight*	Up to 570 g (plastic), up to 950 g (metal)			
Protection Class*	IP30, IP40 (metal)			
Software				
Supported Software Levels*	HiOS Layer 2 Standard (L2S), Layer 2 Advanced (L2A)			
Approvals Configurable				
Safety of Industrial Control Equipment*	EN62368-1, EN 61131-2 , UL61010-2-201 **			
Hazardous Locations*	IECEx Zone 2**, ISA12.12.01 class 1 div. 2**, ATEX Zone 2**			
Ship*	DNVGL			
Transportation*	NEMA TS2, EN50121-4**			

* Depending on the selected variant

NOTE: Did not find a suitable product?
Please visit our website for more configurations and the complete technical specifications: BOBCAT Series

BOBCAT Rail Switch Coniurations

Configurator

catalog.belden.com

B	R	S	5	2	-	0	0	1	2	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
04 = 4 x 1000 Mbit/s Ports
08 = 8 x 1000 Mbit/s Ports
12 = 8 x 1000 Mbit/s Ports + 4 x 2500 Mbit/s Ports
12 = 12 x 1000 Mbit/s Ports
16 = 16 x 1000 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

Type1/Type2 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)
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)*
* PoE variants

Temperature Range

S = 0 °C to +60 °C
T = -40 °C to +70 °C
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, EN61131, EN62368-1
Y = CE, FCC, EN61131, EN62368-1, cUL61010
X = CE, FCC, EN61131, EN62368-1, cUL61010, ISA12.12.01
U = CE, FCC, EN61131, EN62368-1, DNVGL
W = CE, FCC, EN61131, EN62368-1, ATEX/IEXEx
T = CE, FCC, EN61131, EN62368-1, EN50121-3, NEMA TS2
V = CE,FCC,EN61131,EN62368-1,IEC61850
S = CE,FCC,EN61131,EN62368-1,DNVGL+extended ship approval

Approvals Part 2

9 = None
Y = cUL61010
X = cUL61010, ISA12.12.01
U = DNVGL
W = ATEX/IEXEx
T = EN50121

Software Packages

9 = No software packages

OEM Type

HH = Standard

Technology

S = Standard

Software Configuration

E = Hirschmann Standard Configuration
P = Profinet

Software Version

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

Software Release

XX.X. = Current Software Release

MSP30/MSP40 Managed Modular DIN Rail Fast/ Gigabit Ethernet Switches

Keep pace with growing bandwidth requirements in large-scale industrial networks – with up to 10 Gbit/s Ethernet uplinks

Ensure maximum network availability with Hirschmann MSP30/40 configurable modular Gigabit Layer 2 and Layer 3 switches for mission-critical applications. You'll find unique security features and innovative hardware redundancy methods to keep your network up and running.

Depending on your network's current and future bandwidth needs, you can select from up to 28 single Gigabit ports, or opt to use the device's first module slot for up to four 2.5 Gigabit Ethernet ports. For networks that require a 10 Gigabit bandwidth, the MSP40 offers the flexibility to enable these speeds by simply plugging in the newly designed module with two 10 Gigabit Ethernet ports in the first module slot.

Thanks to Power over Ethernet Plus (PoE+) support, terminal equipment can also be powered cost-effectively.

The MSP30-X switch no longer requires the installation of cabinets – customers can simply mount the switch to a wall. The wall-mounting back plane, with M12 connectors, allows the product to withstand vibrations up to 4g. Enduring such a harsh environment makes it unique to the industry.

The Benefits

High-performance capabilities – select up to four 2.5 Gigabit Ethernet ports or two 10 Gigabit Ethernet ports

Flexible design – deliver on increasing bandwidth demands with up to 28 Gigabit ports; all ports/modules are hot swappable for easy changes with no downtime

Simple configuration and diagnosis – thanks to software tools HiView, Industrial HiVision or HTML 5 web interface

Easily supply more PoE+ power – swap in the MSP PoE/PoE+ module to offer 120 more watts of power per module when you need it

Markets

- Automotive
- Transportation
- Discrete Manufacturing
- Mining Industries
- Energy
- Power Transmission & Distribution

Standard Variants

Part Number	Type	Product Description
942 076-005	MSP30-20-2A	Up to 16 x FE TX/FX/SFP, 4 x GE TX/FX/SFP, 18-60 V DC, 0 °C to +60 °C, HiOS L2A
942 076-006	MSP30-20-3A	Up to 16 x FE TX/FX/SFP, 4 x GE TX/FX/SFP, 18-60 V DC, 0 °C to +60 °C, HiOS L3A
942 076-007	MSP30-28-2A	Up to 24 x FE TX/FX/SFP, 4 x GE TX/FX/SFP, 18-60 V DC, 0 °C to +60 °C, HiOS L2A
942 076-008	MSP30-28-3A	Up to 24 x FE TX/FX/SFP, 4 x GE TX/FX/SFP, 18-60 V DC, 0 °C to +60 °C, HiOS L3A
942 076-009	MSP30-28-EEC-CE	Up to 24 x FE TX/FX/SFP, 4 x GE TX/FX/SFP, 18-60 V DC, -40 °C to +70 °C, HiOS L3A, European version
942 076-010	MSP30-28-3A-CE	Up to 24 x FE TX/FX/SFP, 4 x GE TX/FX/SFP, 18-60 V DC, 0 °C to +60 °C, HiOS L3A, European version
942 076-011	MSP30-28-2A-CE	Up to 24 x FE TX/FX/SFP, 4 x GE TX/FX/SFP, 18-60 V DC, 0 °C to +60 °C, HiOS L2A, European version
942 076-012	MSP40-20-2A	Up to 16 x GE TX/SFP, 4 x 2.5 GE SFP or 2 x 10 GE SFP, 18-60V DC, 0 °C to +60 °C, HiOS 2A
942 076-013	MSP40-20-3A	Up to 16 x GE TX/SFP, 4 x 2.5 GE SFP or 2 x 10 GE SFP, 18-60V DC, 0 °C to +60 °C, HiOS 3A
942 076-014	MSP40-28-2A	Up to 24 x GE TX/SFP, 4 x 2.5 GE SFP or 2 x 10 GE SFP, 18-60V DC, 0 °C to +60 °C, HiOS 2A
942 076-015	MSP40-28-3A	Up to 24 x GE TX/SFP, 4 x 2.5 GE SFP or 2 x 10 GE SFP, 18-60V DC, 0 °C to +60 °C, HiOS 3A
942 077-002	MSM20-4FX	4 x FE FX-MM, 0 °C to +60 °C, media module
942 077-003	MSM20-4FX-SM	4 x FE FX-SM, 0 °C to +60 °C, media module
942 077-004	MSM40-4TX	4 x GE TX, 0 °C to +60 °C, media module
942 077-005	MSM40-4C	4 x GE TX/SFP, 0 °C to +60 °C, media module
942 077-006	MSM50-4SFP	4 x 2.5 GE SFP, 0 °C to +60 °C, media module
942 077-007	MSM40-4TX-CE	4 x GE TX, 0 °C to +60 °C, European version, media module
942 077-008	MSM40-4C-CE	4 x GE TX/SFP, 0 °C to +60 °C, European version, media module
942 077-009	MSM60-2SFP	2 x 10 GE SFP, 0 °C to +60 °C, media module

Technical Information

Product Description		
Type	**MSP30/MSP40**	**MSP32/MSP42**
Description	Modular Fast/Full Gigabit Ethernet Industrial Switch for DIN Rail, fanless design, expandable with media modules	
Port Type and Quantity*	MSP3x: up to 4 x GE + 24 x FE ports MSP4x: up to 2 x 1/10 GE or 4 x 1/2.5 GE + 24 x GE ports	
Power over Ethernet (PoE)*		Up to 24 x FE/GE PoE+ ports, 120 W provided by the integrated power supply
Interfaces		
V.24 Interface	1 x RJ45 socket	
USB Interface	1 x USB socket (ACA21-USB adapter)	
SD Interface	1 x SD socket (ACA31-SD adapter)	
Power Requirements		
Operating Voltage*	18 - 60 V DC (redundant power input)	48 - 57 V DC (redundant power input)
Power Consumption (without media modules and PoE)*	16 to 21.5 W	17 to 22.5 W
Ambient Conditions		
Operation Temperature*	0 °C to +60 °C, -40 °C to +70 °C (IEC 60068-2-2 Dry Heat Test +85 °C 16 hours)	
Conformal Coating	Optional	
Mechanical Construction		
Dimensions (W x H x D)*	237/314/391 x 147 x 142 mm	
Weight*	2.1 to 2.7 kg	2.2 to 2.8 kg
Protection Class	IP30	
Software		
Supported Software Levels	HiOS Layer 2 Advanced (L2A), Layer 3 Advanced (L3A)	
Approvals		
Safety of Industrial Control Equipment*	cUL508	
Hazardous Locations*	ISA12.12.01 class 1 div. 2, ATEX Zone 2**	
Ship*	DNVGL	
Transportation*	EN50121-4	
Substation*	IEC 61850-3, IEEE 1613	

* Depending on the selected variant **Approvals pending

NOTE: Did not find a suitable product?
Please visit our website for more configurations and the complete technical specifications: MSP30/MSP40 Series

MSP MICE Switch Power Configurations

2.5 Gigabit/Gigabit Ethernet Uplink Ports, Gigabit Ethernet Uplink Ports with PoE+ Capability

Configurator

catalog.belden.com

M	S	P	4	0	-	0	0	2	8	0	S	C	Z	9	9	9	H	H	E	3	A	X	X	.	X

Design

MSP40 = Ful Cigabit Ethernet Ports
MSP42 = Ful Cigabit Ethernet Ports with PoE(+)Capability
MSP30 = Gigabit Ethernet Uplink Ports
MSP32 = Gigabit Ethernet Uplink Ports with PoE(+)Capability

Number of Fast Ethernet Ports

00 = 00 x 10/100 Mbit/s (MSP40/MSP42)
08 = 08 x 10/ 100 Mbit/s
16 = 16 x 10/100 Mbit/s
24 = 24 x 10/100 Mbit/s

Number of Gigabit Ethernet Ports

00 = 00 x 10/100/1000 Mbit/s
12 = 12 x 10/100/ 1000 Mbit/s (MSP40/MSP42)
20 = 20 x 10/100/1000 Mbit/s (MSP40/MSP42)
28 = 28 x 10/100/1000 Mbit/s (MSP40/MSP42)

Number of 10 Gigabit Ethernet Ports

0 = 10/100/1000/10000 Mbit/s

Temperature Range

S = Standard 0°C to + 60°C
T = Extended -40°C to + 70 °C
E = Extended -40°C to + 70°C with conformal coating

Power Supply

C = 24/36/48 V DC(18 to 60 V DC)
P = 47 to 57 V DC(PoE), 53 to 57 V DC (PoE+)

Approvals

Z9 = CE, FCC, EN 61131 (EN 60950)
Y9 = Z9 + cUL508 (UL60950)
W9 = Z9 + ATEX Zone 2
WY = Y9 + ATEX Zone 2
X9 = Y9 + ISA 12.12.01 Class 1 Div. 2
V9 = Z9 + IEC 61850, IEEE 1613
VY = V9 + cUL508 (UL60950)
VU = VY + GL(ABS, BV, DNS, LR)
VT = VY + EN50121-4
T9 = Z9 + EN50121-4
TY = T9 + cUL508 (UL60950)
U9 = Z9 + GL (ABS, BV, DNS, LR)
UY = U9 + cUL508 (UL60950)
UX = U9 + cUL508+ISA12.12

Software Packages

99 = Reserved
UR = Unicast Routing
MR = Multicast Routing

Customization

HH = Hirschmann Standard
HX = Hirschmann Extreme

Software Configuration

E = Entry (Hirschmann Standard Configuration)

Software Level

3A = HiOS Layer 3 Advanced
2A = HiOS Layer 2 Advanced

Software Release

XX.X = Current Software Release 06.2 = Software Release for MSP40/MSP42

NOTE: The last four categories (Customization, Software Configuration, Software Level and Software Release) are optional.

MICE Switch Power Media Module Configurations

Fast Ethernet Ports, Fast Ethernet/Gigabit Ethernet Ports, Fast Ethernet/Gigabit Ethernet Ports with PoE+ Capability, Fast Ethernet/Gigabit Ethernet/2.5 Gigabit Ethernet Ports

Configurator

catalog.belden.com

Design

MSM20 = Fast Ethernet Ports
MSM24 = Fast Ethernet Digital Input/Output
MSM40 = Fast Ethernet/Gigabit Ethernet Ports
MSM42 = Fast Ethernet/ Gigabit Ethernet Ports with PoE(+) Capability
MSM46 = Fast Ethernet/Gigabit Ethernet Ports with PoE(+) Capability over external power
MSM50 = 2.5 Gigabit/Gigabit Ethernet Ports
MSM60 = 10 Gigabit/Gigabit Ethernet Ports

Port Type 1. Uplink

T1 = Twisted Pair (TX)/RJ45 (10/100/1000 Mbit/s)
T5 = Twisted Pair (TX)/M12 (10/100 Mbit/s)
C1 = Combo Port Twisted Pair (TX)/RJ45 (10/100/1000 Mbit/s) &- Fiber Optic SFP Cage (100/1000 Mbit/s)
G2 = Singlemode Long Haul FX DSC 200 km (100 Mbit/s)
L2 = Singlemode Long Haul FX DSC (100 Mbit/s)
S4 = Singlemode FX ST (100 Mbit/s)
Q6 = SFP Slot (1000/2500 Mbit/s)
M2 = Multimode FX DSC (100 Mbit/s)
M4 = Multimode FX ST (100 Mbit/s)
I/0 = Digital Input/Output
S2 = Singlemode FX DSC (100 Mbit/s)

Port Type 2. Uplink

(see port type 1. Uplink)

Port Type 3. Uplink

(see port type 1. Uplink)

Port Type 4. Uplink

(see port type 1. Uplink)

Temperature Range

S = 0°C to +60 °C T= -40°C to +70°C P= -40 °C to +70°C inclusive conformal coating

Approvals

Z9 = CE, FCC, EN 61131 (EN 60950)
Y9 = Z9 + cUL508 (UL60950)
W9 = Z9 + ATEXZone2
WY = Y9 + ATEX Zone 2
X9 = Y9 + ISA 12.12.01 Class 1 Div.2
V9 = Z9 + IEC 61850, IEEE 1613
VY = V9 + cUL508 (UL60950)
VU = VY + GL(ABS,BV,DNS,LR)
VT = VY + EN50121-4
T9 = Z9 + EN50121-4
TY = T9 + cUL508 (UL60950)
U9 = Z9 + GL(ABS, BV, DNS, LR)
UY = U9 + cUL508 (UL60950)
UW = UY + ATEX Zone 2
UX = UY + ISA 12.12.01 Class 1 Div. 2

Customization

HH = Hirschmann Standard HX = Hirschmann Extreme

Hardware Configuration

9 = NoFPGA

Software Configuration

E = Entry (without configuration)

Software Release

99.9 = No Software

Maintenance

99 = No Maintenance Version

NOTE: The categories (Customization, Hardware Configuration, Software Configuration and Software Release) are optional.

RED25 Entry-level Redundancy Switches

Cost-effective, customizable switches for industries in need of redundancy and security

The RED25 entry-level, Fast Ethernet redundancy switches are designed for industrial automation applications in need of cost-effective and high-end redundant network solutions. In addition to support for various redundancy technologies like Parallel Redundancy Protocol (PRP) and High-availability Seamless Redundancy (HSR) the RED25 switches have comprehensive built-in security features. Other redundancy technologies like Rapid Spanning Tree Protocol (RSTP) and Media Redundancy Protocol (MRP) allow the switches to connect to existing networks and Device Level Ring (DLR) redundancy ensures a recovery time within milliseconds.

The switches are also customizable based on specific port needs or environmental factors, such as temperature range.

RED25 switches are based on the Hirschmann operating system (HiOS) software and offer a comprehensive range of security features. To offer flexibility for network administrators, the switches are available in two four-port versions: four Fast Ethernet TX ports or two Fast Ethernet TX ports, plus two Fast Ethernet small form-factor pluggable (SFP) ports.

The Benefits

Cost-effective – ideal for entry-level industrial network needs and economical installations, including retrofits

Maximum network uptime – interruption-free data communication supported by various redundancy protocols

Flexible for future needs – various features and port configurations create one of the best cost-performance ratios on the market and SFP modules enable simple in-the-field changes

Markets

- Automotive
- Manufacturing
- Machine Building
- Water and Wastewater

Standard Variants

Part Number	Type	Product Description
942 137-002	RED25-4TX	4 x FE TX, 12-48 V DC, -40 °C to +60 °C, HiOS L2S, enhanced redundancy
942 137-003	RED25-2TX/2SFP	2 x FE TX, 2 x FE SFP 12-48 V DC, -40 °C to +60 °C, HiOS L2S, enhanced redundancy

Technical Information

Product Description	
Type	**RED25**
Description	Managed, Industrial Ethernet Switch DIN Rail, fanless design, seamless redundancy protocols
Port Type and Quantity*	4 x FE TX ports, 2 x FE TX + 2 x FE SFP ports
Additional Interfaces	
V.24 Interface	1x RJ11 socket
USB Interface	1 x USB (ACA22-USB adapter)
Power Requirements	
Operating Voltage	12 - 48 V DC and 24 V AC (redundant power input)
Power Consumption*	7 to 9 W
Ambient Conditions	
Operation Temperature*	0 °C to +60 °C, -40 °C to +70 °C
Conformal Coating	Optional
Mechanical Construction	
Dimensions (W x H x D)	47 x 131 x 111mm
Weight	320 g
Protection Class	IP20
Software	
Supported Software Levels	HiOS Layer 2 Standard (L2S)
Approvals	
Safety of Industrial Control Equipment	cUL 61010-1/61010-2-201

* Depending on the selected variant

NOTE: Did not find a suitable product?
Please visit our website for more configurations and the complete technical specifications: RED25 Series

Entry-level Redundancy Switch Configurations

Configurator

catalog.belden.com

RED25-04 00 2Z6 TT S DD Z9 HM E 2S XX.X

Design

RED25 = Redundancy Switch

Number of Fast Ethernet Ports

04 = 4 Fast Ethernet TX Ports

Number of Gigabit Ethernet Ports

00 = not supported

Uplink Port Configuration

2T1 = 2 x Twisted Pair TX, RJ45, 100 Mbit/s
2Z6 = 2 x SFP Slots, 100 Mbit/s

Port Configuration

TT = 2 x Twisted Pair TX, RJ45, 100 Mbit/s

Temperature Range

S = 0°C to + 60°C
T = -40°C to + 70°C
E = -40°C to + 70°CConformal Coating

Power Supply

DD = 2 x 12 to 48 V DC, 24V AC

Approvals

Z9 = CE, FCC, EN 61131, EN 60950
Y9 = CE, FCC, EN 61131, EN 60950, UL 61010-1/-2-210

Pre-Configuration

HM = Fast MRP
HP = PRP
HH = HSR
HD = DL R

Software Configuration

E = Standard

Software Level

2S = HiOS Layer 2 Standard

Software Version

XX.X. = Current Software Release

RSP Managed Industrial DIN Rail Fast/Gigabit Ethernet Switches

Guarantee uninterrupted data communication even under the harshest conditions

In networks that combine Fast and Gigabit Ethernet speeds, choose the RSP switches, which enable the integration of new redundancy protocols and allow uninterrupted data communication. These hardened managed Industrial DIN Rail Fast and Gigabit Ethernet switches support comprehensive redundancy protocols like PRP (Parallel Redundancy Protocol), HSR (High-availability Seamless Redundancy), DLR (Device Level Ring) and provide optimum flexibility with several thousand variants.

The RSP Switch features 8 Fast Ethernet ports, 3 Fast or Gigabit Ethernet uplink ports for SFP transceivers and up to 7 SFP slots. Fiber uplink ports are available in multimode and/or singlemode. You can choose one of our most common configurations or you can easily customize a switch to your environment.

The Benefits

Extensive security functions – guarantee all-around protection against network-borne attacks and operator errors

Precision time synchronization – in accordance with IEEE 1588v2, which enables applications to comply with stringent real-time requirements

Extremely ruggedized – robust hardware and powerful operating system to withstand extremely harsh environmental conditions

Markets

- Power Transmission & Distribution
- Renewable Energies
- Machine Building
- Transportation
- Security Applications

Standard Variants

Part Number	Type	Product Description
942 053-018	RSP20-8TX/3SFP-2A	8 x FE TX, 3 x FE SFP, 2 x 24-48 V DC, 0 °C to +60 °C, HiOS L2A
942 053-019	RSP25-8TX/3SFP-EEC-3S	8 x FE TX, 3 x FE SFP, 2 x 24-48 V DC, -40 °C to +70 °C, HiOS L3S, enhanced redundancy
942 053-020	RSP25-8TX/3SFP-EEC-2HV-3S	8 x FE TX, 3 x FE SFP, 2 x 60-250 V DC, -40 °C to +70 °C, HiOS L3S, enhanced redundancy
942 053-021	RSP30-8TX/3SFP-2A	8 x FE TX, 3 x GE SFP, 2 x 24-48 V DC, 0 °C to +60 °C, HiOS L2A
942 053-022	RSP35-8TX/3SFP-EEC-3S	8 x FE TX, 3 x GE SFP, 2 x 24-48 V DC, -40 °C to +70 °C, HiOS L3S, enhanced redundancy
942 053-023	RSP35-8TX/3SFP-EEC-2HV-3S	8 x FE TX, 3 x GE SFP, 2 x 60-250 V DC, -40 °C to +70 °C, HiOS L3S, enhanced redundancy

Technical Information

Product Description				
Type	**RSP20**	**RSP30**	**RSP25**	**RSP35**
Description	Managed, Industrial Switch DIN Rail, fanless design, seamless redundancy protocols*			
Port Type and Quantity	4 x FE TX + 7 x FE SFP ports or 8 x FE TX + 3 x FE SFP ports	4 x FE TX + 4 x FE SFP + 3 x FE/GE SFP ports or 8 x FE TX + 3 x FE/GE SFP ports	4 x FE TX + 7 x FE SFP ports or 8 x FE TX + 3 x FE SFP ports	4 x FE TX + 4 x FE SFP + 3 x FE/GE SFP ports or 8 x FE TX + 3 x FE/GE SFP ports
Enhanced Redundancy Functions*			Fast MRP, HSR, PRP, DLR	
Interfaces				
V.24 Interface	1 x RJ11 socket			
SD Interface	1 x SD socket (ACA31-SD adapter)			
Power Requirements				
Operating Voltage*	12 - 48 V DC (redundant power input), 60 - 250 V DC and 110 - 230 V AC (redundant)			
Power Consumption*	15 to 24 W			
Ambient Conditions				
Operating Temperature*	0 °C to +60 °C, -40 °C to +70 °C (IEC 60068-2-2 Dry Heat Test +85 °C 16 hours)			
Conformal Coating	Optional			
Mechanical Construction				
Dimensions (W x H x D)*	90/98 x 164 x 120 mm			
Weight*	1.2 kg to 1.5 kg			
Protection Class	IP20			
Software				
Supported Software Levels*	HiOS Layer 2 Standard (L2S), Layer 2 Advanced (L2A), Layer 3 Standard (L3S)			
Approvals				
Safety of Industrial Control Equipment*	cUL508			
Hazardous Locations*	IECEx Zone 2, ISA12.12.01 class 1 div. 2, ATEX Zone 2			
Ship*	DNVGL			
Transportation*	NEMA TS2, EN50121-4			
Substation*	IEC 61850-3, IEEE 1613			

* Depending on the selected variant

NOTE: Did not find a suitable product?
Please visit our website for more configurations and the complete technical specifications: RSP Series

RSP Series Managed Industrial DIN Rail Switch Configurations

Fast and Gigabit Ethernet Networks

Configurator

catalog.belden.com

R	S	P	-	3	5	0	8	0	3	3	O	6	T	T	E	K	9	Y	9	H	P	E	2	S	X	X	.	X

Design/Model

RSP = Rail Switch Power

Data Rates

2 = 10/100 Mbit/s Ports
3 = 10/100 Mbit/s and 10/100/1000 Mbit/s Ports

Hardware Type

0 = Standard
5 = Enhanced Redundancy (PRP, Fast MRP, HSR), Hardware IEEE 1588 v2

Fast Ethernet Ports

08 = 8 x 10/100 Mbit/s
11 = 11 x 10/100 Mbit/s

Gigabit Ethernet Ports

00 = None
03 = 3 x 10/100/1000 Mbit/s

Uplink Ports

3Z6 = 3 x SFP Slots (100 Mbit/s)
3O6 = 3 x SFP Slots (1000 Mbit/s)

Port Configuration

TT = All Twisted Pair/RJ45
ZT = 4 x SFP Slots (100 Mbit/s), 4 x (100 Mbit/s) Twisted Pair/RJ45

Temperature Range

S = Standard 0°C to + 60°C
T = Extended -40°C to + 70°C
E = Extended -40°C to + 70°C inclusive Conformal Coating

Voltage Range

CC = 2 x 24/36/48V DC (18 to 60 V DC)
K9 = 1 x 60/110/125/220/250 V DC (48 V to 320 V DC) and 110/120/220/230 V AC (88 to 265 V AC)
KK = 2 x 60/110/125/220/250 V DC(48 V to 320 V DC) and 110/120/220/230 V AC (88 to 265 V AC)
TT = 2 x 12 - 24 V DC

Approvals

Z9 = CE, FCC, EN 61131
Y9 = CE, FCC, EN 61131, cUL508
V9 = CE, FCC, EN 61131, IEC 61850, IEEE 1613
VY = CE, FCC, EN 61131, IEC 61850, IEEE 1613, cUL508
VU = Z9 + IEC61850,IEEE1613,GL
VT = Z9 + IEC61850,EN50121-4,cul508(Substation, Train,UL)
T9 = Z9 + EN50121-4(Train)
TY = Z9 + EN50121-4 + cUL508(Train,UL)
U9 = Z9 + GL(Ship)
UX = Z9 + GL,cUL508,ISA12.12(ship,UL,US Haz Loc.)
UY = Z9 + GL,cUL508(Ship,UL)
WA = Z9 + ATEX,IECEx(EU/Int. Haz Loc.)
WB = Z9 + ATEX,IECEx,GL(EU/US/Int. Haz, Ship)
WC = Z9 + ATEX,IECEx,ISA12.12(EU/US/Int. Haz, UL)
WD = Z9 + ATEX,IECEx,ISA12.12,GL(EU/US/Int. Haz,UL, Ship)
X9 = Z9 + cUL508,ISA12.12(UL,US HazLoc)

Customization

HS = Standard
HM = Fast MRP
HP = PRP
HH = HSR
HD = DLR
HN = 1:1 NAT

Software Configuration

E = Enhanced Encryption

Software Level

2S = HiOS Layer 2 Standard
2A = HiOS Layer 2 Advanced
3S = HiOS Layer 3 Standard

Software Release

XX.X = Current Software Release

NOTE: The part number categories (Configuration and Software Release) are optional.

RSPE Expandable Modular Managed Industrial DIN Rail Fast/ Gigabit Switches

100 percent availability for data communication and high productivity for systems and machines

In networks that combine Fast and Gigabit Ethernet speeds and require 100 percent availability for data communication, select the Managed Industrial DIN Rail Fast or Gigabit Ethernet RSPE switches and media modules.

The compact and extremely robust RSPE switches guarantee highly available data communication and precise time synchronization in accordance with IEEE 1588v2. They also allow flexible installations in which the network design can be quickly adapted to cope with changing application needs. Because media modules can be added to the basic switch devices in next to no time, practical and cost-effective solutions are guaranteed.

By adding simple-to-install media modules, a basic RSPE switch with eight Fast Ethernet ports and four combo ports can be quickly extended to provide up to 28 ports. The basic device is optionally available with the HSR (High-availability Seamless Redundancy) and PRP (Parallel Redundancy Protocol) uninterruptible redundancy protocols. Different combinations of copper or fiber ports (plus PoE/PoE+) can be selected depending on the module type.

Support for Time Sensitive Networking (TSN) makes the RSPE35 and RSPE37 devices ideal for latency-critical applications.

The Benefits

Future-proof design and best-possible investment protection – thanks to the maximum flexibility provided by the media modules

Maximum productivity – for systems and machines thanks to completely interruption-free data communication

Future-proof interoperability – built-in PRP and HSR based on international IEC62439 standard

Cost-effective solution – easy-to-add media modules and PoE/PoE+ ports for a cost-efficient power supply of your end devices

Markets

- Power Transmission & Distribution
- Renewable Energy
- Transportation
- Road and Rail Traffic
- Cable Cars
- Ports and Airports

Standard Variants

Part Number	Type	Product Description
942 084-002	RSPE30-8TX/4C-2A	8 x FE TX, 4 x GE TX/SFP, 2 x 24-48 V DC, 0 °C to +60°C, HiOS L2A
942 084-003	RSPE30-8TX/4C-EEC-2HV-3S	8 x FE TX, 4 x GE TX/SFP, 2 x 60-250 V DC, -40 °C to +70 °C, HiOS L3A
942 084-004	RSPE32-8TX/4C-EEC-2A	8 x FE TX, 4 x GE TX/SFP, 2 x 47-57 V DC, 0 °C to +60°C, PoE+, HiOS L2A,
942 084-005	RSPE35-8TX/4C-EEC-2HV-3S	8 x FE TX, 4 x GE TX/SFP, 2 x 60-250 V DC, -40 °C to +70 °C, HiOS L3A, enhanced redundancy
942 084-006	RSPE37-8TX/4C-EEC-3S	8 x FE TX, 4 x GE TX/SFP, 2 x 47-57 V DC, -40 °C to +70 °C,PoE+, HiOS L3A, enhanced redundancy
942 106-004	RSPM20-8TX-EEC	8 x FE TX, -40 °C to +70 °C, media module
942 106-005	RSPM20-8SFP-EEC	8 x FE SFP, -40 °C to +70 °C, media module
942 106-006	RSPM22-8TX-EEC	8 x FE TX, -40 °C to +70 °C, PoE, media module
942 131-001	RSPM-cover	Cover for RSPM modules

Technical Information

Product Description		
Type	**RSPE30/RSPE32**	**RSPE35/RSPE37**
Description*	Modular Managed Industrial Switch DIN Rail, fanless design, PoE+*	Modular Managed Industrial Switch DIN Rail, fanless design, seamless redundancy protocols, PoE+*
Port Type and Quantity*	Up to 28 ports in total, basic unit: 4 x FE/GE combo + 8 x FE TX ports, expandable with two media modules with 8 x FE ports each	
Power over Ethernet (PoE)*	Up to 24 x PoE+ ports, 120 W total power budget	
Interfaces		
V.24 Interface	1 x RJ11 socket	
USB Interface	1 x USB socket (ACA22-USB adapter)	
SD Card Interface	1 x SD socket (ACA31-SD adapter))	
Power Requirements		
Operating Voltage*	24 - 48 V DC, 48 - 54 V DC (redundant power input), 60 - 250 V DC and 110 - 230 V AC (redundant)	
Power Consumption*	Up to 34 W* plus PoE	Up to 36 W* plus PoE
Ambient Conditions		
Operating Temperature*	0 °C to +60 °C, -40 °C to +70 °C (IEC 60068-2-2 Dry Heat Test + 85 °C 16 hours)	
Conformal Coating	Optional	
Mechanical Construction		
Dimensions (W x H x D)*	209/217 x 164 x 120 mm	
Weight*	2.2 kg to 2.5 kg (without media modules)	
Protection Class	IP20	
Software		
Supported Software Levels*	HiOS Layer 2 Standard (L2S), Layer 2 Advanced (L2A), Layer 3 Standard (L3S)	
Approvals		
Safety of Industrial Control Equipment*	EN 60950-1, EN 61131-2 , UL61010-1/-2-201	
Hazardous Locations*	IECEx Zone 2, ISA12.12.01 class 1 div. 2, ATEX Zone 2	
Ship*	DNVGL	
Transportation*	NEMA TS2, EN 50121-4	
Substation*	IEC 61850-3, IEEE 1613	

* Depending on the selected variant




NOTE: Did not find a suitable product?
Please visit our website for more configurations and the complete technical specifications: RSPE Series

RSPE Switch Configurations

Configurator

catalog.belden.com

RSPE35-2404 4O7 T99-T K9 VT 99 HH P E 2A XX.X

Design

RSPE30 = Standard Version
RSPE32 = Standard Version with PoE(+) Capability
RSPE35 = Standard Version with Enhanced Redundancy HSR, PRP, Fast MRP
RSPE37 = Standard Version with Enhanced Redundancy HSR, PRP, Fast MRP and PoE(+)

Number of Fast Ethernet Ports

24 = 24 x 10/100 Mbit/s

Number of Gigabit Ethernet Ports

04 = 04 x 10/100/1000 Mbit/s

Uplink Ports

407 = 04 x Combo Ports (10/100/1000 Mbit/s)

Port Configuration

T99 = 04 x Combo Ports (10/100/1000 Mbit/s)

Temperature Range

S = 0°C to + 60°C
T = -40°C to + 70°C
E = -40°C to + 70°C inclusive Conformal Coating

Power Supply

CC = 02 x 24 to 60 VDC
K9 = 01 x 60 to 250 V DC and 110 to 230 V AC
KK = 02 x 60 to 250 V DCand110 to 230 V AC
PP = 02 x 47 to 57 V DC (PoE)or 53 to 57 V DC(PoE+)

Approvals

Z9 = CE, FCC, EU Safety
X9 = CE, FCC, EU Safety, US Safety, Hazardous Locations
VY = CE, FCC, EU Safety, US Safety, Substation
VU = CE, FCC, EU Safety, US Safety, Substation, Marine
VT = CE,FCC, EU Safety, US Safety, Substation, Transportation
UY = CE, FCC, EU Safety, US Safety, Marine
UT = CE, FCC, EU Safety, US Safety, Marine, Transportation
Y9 = CE, FCC, EU Safety, US Safety
V9 = CE, FCC, EU Safety, Substation
U9 = CE, FCC, EU Safety, Marine
T9 = CE, FCC, EU Safety, Transportation
TY = CE, FCC, EU Safety, US Safety, Transportation

Software Packages

99 = Reserved
NA = 1:1 NAT

OEM Type

HH = Standard

Hardware Configuration

5 = Standard
M = Fast MRP
P = PRP
H = HSR
D = DLR

Software Confguration

E = Hirschmann Standard Configuration

Software Version

2S = HiOS Layer 2 Standard
2A = HiOS Layer 2 Advanced
3S = HiOS Layer 3 Standard

Software Release

XX.X. = Current Software Release

NOTE: The last four categories (OEM type, configurations, software version and software release) are optional.

GREYHOUND 105/106 Ethernet Switches

High-Performance Industrial Aggregation Layer Switches

Hirschmann's GREYHOUND 105/106 devices serve as multipurpose aggregation layer switches – with its IT form factor, coupled with OT environmental robustness, the GREYHOUND helps you to bridge the gap between your office and your industrial networks.

GREYHOUND 105/106 Ethernet switches combine hardened industrial hardware with high-performance switching and routing* capabilities to deliver fast, secure, cost-effective and future-proof connectivity.

GREYHOUND 105/106 supports up to 30 ports in a compact design to meet future bandwidth needs and connect more network nodes. Both 105 and 106 model provides multiple configuration options which provide feature and price flexibility, so customers only buy the speed and power their application needs. Further more, the features offered by HiOS switch software provides robust security and high-performance switching.

Key Features

- 30 ports in 1U fanless rackmount enclosure
- Tri-speed fiber SFP slots (1, 2.5 and 10 Gigabit speeds); up to six 10 Gigabit Ethernet ports available
- Power supplies for many voltage ranges (24-48 VDC, 110-240 VAC, 110-250 VDC); redundant power supplies also available
- Operating temperature of –10°C to +60°C
- Comprehensive HiOS software available for advanced security (Layer 2 or 3*), with free updates in the field
- Developed according to an independently certified international security standard, IEC 62443-4-1 (secure development life cycle)

Standard Variants

Product Description		
Part Number	**Type**	**Product Description**
942 287-001	GRS105-24TX/6SFP-1HV-2A	6x 1/2.5GE SFP + 24x GE TX, 110-240 VAC power supply, -10°C to +60°C, HiOS L2A
942 287-002	GRS105-24TX/6SFP-2HV-2A	6x 1/2.5GE SFP + 24x GE TX, redundant 110-240 VAC power supplies, -10°C to +60°C, HiOS L2A
942 287-003*	GRS105-24TX/6SFP-2HV-3A	6x 1/2.5GE SFP + 24x GE TX, redundant 110-240 VAC power supplies, -10°C to +60°C, HiOS L3A-MR
942 287-004	GRS105-16TX/14SFP-1HV-2A	6x 1/2.5GE SFP + 8x GE SFP + 16x GE TX, 110-240 VAC power supply, -10°C to +60°C, HiOS L2A
942 287-005	GRS105-16TX/14SFP-2HV-2A	6x 1/2.5GE SFP + 8x GE SFP + 16x GE TX, redundant 110-240 VAC power supplies, -10°C to +60°C, HiOS L2A
942 287-006*	GRS105-16TX/14SFP-2HV-3A	6x 1/2.5GE SFP + 8x GE SFP + 16x GE TX, redundant 110-240 VAC power supplies, -10°C to +60°C, HiOS L3A-MR
942 287-007	GRS106-24TX/6SFP-1HV-2A	6x 1/2.5/10GE SFP + 8x 1/2.5GE TX + 16x GE TX, 110-240 VAC power supply, -10°C to +60°C, HiOS L2A
942 287-008	GRS106-24TX/6SFP-2HV-2A	6x 1/2.5/10GE SFP + 8x 1/2.5GE TX + 16x GE TX, redundant 110-240 VAC power supplies, -10°C to +60°C, HiOS L2A
942 287-009*	GRS106-24TX/6SFP-2HV-3A	6x 1/2.5/10GE SFP + 8x 1/2.5GE TX + 16x GE TX, redundant 110-240 VAC power supplies, -10°C to +60°C, HiOS L3A-MR
942 287-010	GRS106-16TX/14SFP-1HV-2A	6x 1/2.5/10GE SFP + 8x 1/2.5GE SFP + 16x GE TX, 110-240 VAC power supply, -10°C to +60°C, HiOS L2A
942 287-011	GRS106-16TX/14SFP-2HV-2A	6x 1/2.5/10GE SFP + 8x 1/2.5GE SFP + 16x GE TX, redundant 110-240 VAC power supplies, -10°C to +60°C, HiOS L2A
942 287-012*	GRS106-16TX/14SFP-2HV-3A	6x 1/2.5/10GE SFP + 8x 1/2.5GE SFP + 16x GE TX, redundant 110-240 VAC power supplies, -10°C to +60°C, HiOS L3A-MR

*Product is currently unavailable, will be released in future.

Technical Information

Product Description				
Type	**GRS105-24TX/ GRS105-6F8T**	**GRS105-16TX/ GRS105-6F8F**	**GRS106-24TX/ GRS106-6F8T**	**GRS106-16TX/ GRS106-6F8F**
Description	GREYHOUND 105/106 Series, Managed Industrial Aggregation Layer Switch, fanless design, 19″ rack mount, up to 14 fiber ports and 30 ports in total			
Port Type and Quantity	6x 1/2.5GE SFP + 24x GE TX	6x 1/2.5GE SFP + 8x GE SFP + 16x GE TX	6x 1/2.5/10GE SFP + 8x 1/2.5GE TX + 16x GE TX	6x 1/2.5/10GE SFP + 8x 1/2.5GE SFP + 16x GE TX
Additional Interfaces				
USB-C	1 x USB-C (client) for local management			
SD-card slot	1x SD card slot to connect the auto-configuration adapter ACA31			
Power Requirements				
Operating Voltage**	Power Supply 1:24-48 VDC, 110-250 VDC or 110-240 VAC			
Power Supply	2: not equipped, 24-48 VDC, 110-250 VDC or 110-240 VAC			
Power Consumption**	Basic unit one power supply max 35W			
Ambient Conditions				
Operating Temperature	–10° to +60° C			
Conformal Coating	Optional			
Mechanical Construction				
Dimensions (W x H x D)	444 x 44 x 355mm			
Weight	5 kg			
Protection Class	IP20			
Software				
Supported HiOS Software Levels	Layer 2 Standard (L2S), Layer 2 Advanced (L2A)			
Approvals				
Basis Standard	CE, FCC, EN61131			
Safety of Industrial Control Equipment	EN62368, cUL62368			
Transportation	EN50121-4			
Accessories				
Accessories to order separately	Network Management Industrial HiVision, ACA31, SFP(+) transceivers, power cord			

*Depending on the selected variant

NOTE: Did not find a suitable product? Please visit our website for more configurations and the complete technical specifications: GREYHOUND105/106 Series

GREYHOUND GRS105/106

Switch Configurations

Configurator

catalog.belden.com

G	R	S	1	-	0	5	6	F	8	F	1	6	T	S	G	9	T	9	H	H	S	B	2	A	9	9	X	X	.	X

Design

GRS1 = GREYHOUND 19" Rugged Switch

Technology

0 = Standard

Data Rate

6 = 6 x 1/2.5/10GE (PG I) + 8 x 1/2.5GE (PG II)+ 16 x GE (PG III)
5 = 6 x 1/2.5GE (PG I) + 24 x GE (PG II & III)

Port Group I

6F = 6 SFP Slots

Port Group II

8F = 6 SFP Slots
8T = 8 TX Ports

Port Group III

16T = 16 TX Ports

Temperature Range

S = -10°C to + 60 °C
C = Standard, -10°C to + 60 °C, Inclusive Conformal Coating

Power Supply 1

G = 110 to 240 V AC
M = 110 to 250 V DC
L = 24 to 48 V DC

Power Supply 2

G = 110 to 240 V AC
M = 110 to 250 V DC
L = 24 to 48 V DC
9 = No second power supply

Approvals

Z9 = CE,FCC;EN61131,EN62368 Y9 = CE,UL62368
T9 = CE,EN50121-4 TY = CE,EN50121-4,UL62368

Customization

HH = Hirschmann Standard

Hardware Configuration

S = Standard

Software Configuration

E = Empty
B = Diagnostic User(BDEW)

Software Level

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

Software Packages

99 = Reserved
MR = IPv4 Multicast Routing Package

Software Version

XX.X. = Latest Software Release

NOTE: The last four categories (OEM type, configurations, software version and software release) are optional.

DRAGON MACH4x00 Gigabit Layer 3 Backbone Switches

Offer an innovative, technically-advanced architecture that delivers superior bandwidth and port densities for connecting OT and IT networks

Data density is increasing rapidly and industrial backbone networks need higher bandwidths to efficiently transport information from the field level to the control room. The DRAGON MACH4x00 series offers superior bandwidth capabilities to meet increasing data demands. With four or eight ports that can be set-up for 2.5 Gigabit or 10 Gigabit, redundant power supplies and various management interfaces, engineers will be able to handle current and future bandwidth needs without compromising on availability.

The extended port flexibility offered by DRAGON MACH4x00 series allows engineers to progressively transition the network rather than go directly from 1 Gigabit ports to 10 Gigabit ports. No external power chassis is needed, which means engineers can use two internal redundant power supplies to reduce costs without compromising performance.

The DRAGON MACH4x00 switches offer Hirschmann's operating system HiOS Layer 2 and optionally also Layer 3 functions, giving you the ability to choose the software features at time of order.

The Benefits

Handle evolving bandwidth needs – connect IT and OT networks and transfer more data from the field level to the control room without compromising network availability

Progressive network bandwidth – extend the flexibility at the port level and obtain greater control

Maximize uptime – rely on fully redundant capabilities for data transmission and power input

Extensive network security features – backward compatibility using Hirschmann's best-in-class operating system HiOS

Markets

- Transportation
- Rail-rolling Stock
- Mass Transit Systems
- Railway and Train Stations
- Airports
- Oil and Gas
- Power Transmission & Distribution
- Manufacturing
- Automotive

Technical information - Basic Unit

Product Description Basic Units			
Type	**DRAGON MACH4000-52G**	**DRAGON MACH4000-48G+4X**	**DRAGON MACH4500-80G+8X**
Description	Full Gigabit Ethernet Backbone Switch with internal redundant power supply, modular design and advanced Layer 2 and Layer 3 HiOS features		
Port Type and Quantity	Ports in total up to 52 Basic unit: 4 x 1 GE SFP, expandable with four media modules 10 or 12 FE/GE ports each	Ports in total up to 52 Basic unit: 4 x 1/2.5/10 GE SFP+, expandable with four media modules 10 or 12 FE/GE ports each	Ports in total up to 88 Basic unit: 8 x 1/2.5/10 GE SFP+ plus 32 x FE/GE ports, expandable with four media modules 10 or 12 FE/GE ports each
Order No.	942 318-001 – DRAGON MACH4000-52G-L2A 942 318-002 – DRAGON MACH4000-52G-L3A-UR 942 318-003 – DRAGON MACH4000-52G-L3A-MR	942 154-001 – DRAGON MACH4000-48G+4X-L2A 942 154-002 – DRAGON MACH4000-48G+4X-L3A-UR 942 154-003 – DRAGON MACH4000-48G+4X-L3A-MR	942 153-001 – DRAGON MACH4500-80G+8X-L2A 942 153-002 – DRAGON MACH4500-80G+8X-L3A-UR 942 153-003 – DRAGON MACH4500-80G+8X-L3A-MR
More Interfaces			
V.24 Interface	1 x RJ45 socket		
SD Card Slot	1 x to connect auto-configuration adapter ACA31 (SD)		
USB Slot	1 x to connect auto-configuration adapter ACA22 (USB)		
Power Requirements			
Out-of-Band Management	1 x RJ45 socket		
Operating Voltage	PSU unit input: 100-240 V AC; switch can be operated with either 1 or 2 field-replaceable PSU units (to be ordered seperately)		
Power Consumption	Max. 200 W		
Mechanical Construction			
Dimensions (WxHxD)	480 mm x 88 mm x 445 mm		
Weight	7.3 kg	7.3 kg	7. 8kg
Protection Class	IP20		
Software			
Supported HiOS Software Levels	Layer 2 Advanced (L2A) or Layer 3 Advanced (L3A) with Unicast or Multicast Routing		
Software Layer 2 Advanced			
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	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, RSPAN, SFLOW, VLAN Mirroring, Port Mirroring N:2, System Information, Self-Tests on Cold Start, Copper Cable Test, SFP Management, Configuration Check Dialog, Switch Dump, Snapshot Configuration Feature		
Configuration	BOOTP/DHCP Client with Auto-Configuration, DHCP Server: per Port, DHCP Server: Pools per VLAN, AutoConfiguration Adapter ACA31 (SD card), 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	MAC-based Port Security, Port-based Access Control with 802.1X, Guest/unauthenticated VLAN, Integrated Authentication Server (IAS), RADIUS VLAN Assignment, RADIUS Policy Assignment, Multi-Client Authentication per Port, MAC Authentication Bypass, DHCP Snooping, IP Source Guard, Dynamic ARP Inspection, Denial-of-Service Prevention, LDAP, Ingress MAC-based ACL, Egress MAC-based ACL, Ingress IPv4-based ACL, Egress IPv4-based ACL, Time-based ACL, VLAN-based ACL, Ingress VLAN-based ACL, Egress VLAN-based ACL, ACL Flow-based Limiting, 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		
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), MSTP (802.1Q), RSTP Guards		
Industrial Profiles	EtherNet/IP Protocol, IEC61850 Protocol (MMS Server, Switch Model), ModbusTCP, PROFINET IO Protocol		
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, IP Ingress DiffServ Classification and Policing, IP Egress DiffServ Classification and Policing, Queue-Shaping / Max. Queue Bandwidth, Flow Control (802.3X), Egress Interface Shaping, Ingress Storm Protection, Jumbo Frames, VLAN (802.1Q), Protocol-based VLAN, VLAN Unaware Mode, GARP VLAN Registration Protocol (GVRP), Voice VLAN, MAC-based VLAN, IP subnet-based 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)		
Time Synchronization	SNTP Client, SNTP Server; DRAGON MACH4000-xx only: PTPv2 Transparent Clock two-step, PTPv2 Boundary Clock, Buffered Real Time		
Miscellaneous	Manual Cable Crossing, Port Power Down		
Software Layer 3 Advanced (additional features)			
Redundancy	VRRP, VRRP Tracking, HiVRRP (VRRP enhancements)		
Routing	Full Wire-Speed Routing, Port-based Router Interfaces, VLAN-based Router Interfaces, Loopback Interface, ICMP Filter, Net-directed Broadcasts, Static Unicast Routing, OSPFv2, RIP v1/v2, Equal Cost Multiple Path (ECMP), ICMP Router Discovery (IRDP), Proxy ARP, Static Route Tracking, IP/UDP Helper		
Multicast Routing	IGMP v1/v2/v3, IGMP Proxy (Multicast Routing), DVMRP, PIM-DM (RFC3973), PIM-SM / SSM (RFC4601)		

Ambient Conditions	
Operating Temperature	0°C to 60°C
Storage Temperature	-40°C to 70°C
Rel. Humidity (non-condensing)	10% to 90%

Approvals		
Basic Standard	C-Tick, CE, EN61131	
Safety of Industrial Control Equipment		UL 61010-1 and UL 61010-2-201
Safety of information technology equipment	EN 60950-1	
Transportation	EN 50121-4	

Scope of delivery	
Scope of delivery	Device, 1x Fan module D4K-AIR, 1x D4K-PSU-PANEL, 4x D4K-LC-PANEL, General safety instruction

NOTE: These are the prominent technical specifications. For complete technical specifications visit: www.hirschmann.com

Technical information - Accessories

Part Number	Product Code	Product Description
Port Modules		
942 155-001	D4K-12TP-RJ45	12 x FE/GE TX ports, field-replaceable
942 155-501	D4K-12SFP	12 x FE/GE SFP slots, field-replaceable
942 294-001	D4K-10TP-PoE	10 x FE/GE PoE+ ports; max. PoE power 300 W; PoE power supplied by an external PSU; field-replaceable
Power Supply		
942 156-001	D4K-PSU-300W-HV	DRAGON MACH4x00 300W power supply, field-replaceable
Others / Spare Parts		
942 157-001	D4K-AIR	DRAGON MACH4x00 fan unit, field-replaceable
942 222-001	D4K-LC-PANEL	Blind panel for port module slot
942 222-002	D4K-PSU-PANEL	Blind panel for PSU slot

Optical Transceivers for DRAGON MACH4x00

Part Number	Product Code	Product Description	
2.5 Gigabit Ethernet SFP Transceivers			
942 162-001	M-SFP-2.5-MM/LC EEC	Multimode Fiber (MM) 50/125 µm	0 to 550 m, 850 nm; 4 dB link budget; OM3 fiber (3.5 dB/km, 2000 MHz*km)
		Multimode Fiber (MM) 50/125 µm	0 to 400 m, 850 nm; 4 dB link budget; OM2 fiber (3.5 dB/km, 500 MHz*km)
		Multimode Fiber (MM) 62.5/125 µm	0 to 170 m, 850 nm; 4 dB link budget; OM1 fiber (3.5 dB/km, 200 MHz*km)
942 163-001	M-SFP-2.5-SM-/LC EEC	Singlemode Fiber (SM) 9/125 µm	0 to 5 km, 1310 nm; 8.5 dB link budget; 0.55 dB/km; (GR-253 CORE)
942 164-001	M-SFP-2.5-SM/LC EEC	Singlemode Fiber (SM) 9/125 µm	0 to 20 km, 1310 nm; 13 dB link budget; 0.55 dB/km; (GR-253 CORE)
942 165-001	M-SFP-2.5-SM+/LC EEC	Singlemode Fiber (SM) 9/125 µm	21 to 45 km, 1310 nm; 12 to 25 dB link budget; 0.55 dB/km; (GR-253 CORE)
942 220-001	M-SFP-2.5-LH/LC	Singlemode Fiber (SM) 9/125 µm	0 to 80 km, 1551 nm; 14 to 28 dB link budget; 0.25 dB/km
10 Gigabit Ethernet SFP+ Transceivers			
942 210-001	M-SFP-10-SR/LC EEC	Multimode Fiber (MM) 50/125 µm	0 to 82 m, 850 nm; 8.1 dB link budget; OM2 fiber (3 dB/km, 500 MHz*km)
		Multimode Fiber (MM) 50/125 µm	0 to 300 m, 850 nm; 8.1 dB link budget; OM3 fiber (3 dB/km, 2000 MHz*km)
		Multimode Fiber (MM) 50/125 µm	0 to 400 m, 850 nm; 8.1 dB link budget; OM4 fiber (3 dB/km, 4700 MHz*km)
		Multimode Fiber (MM) 62.5/125 µm	0 to 33 m, 850 nm; 8.1 dB link budget; OM1 fiber (3.2 dB/km, 200 MHz*km)
942 211-001	M-SFP-10-LR/LC EEC	Singlemode Fiber (SM) 9/125 µm	0 to 10 km, 1310 nm; 7.4 dB link budget; 0.4 dB/km
942 212-001	M-SFP-10-ER/LC EEC	Singlemode Fiber (SM) 9/125 µm	10 to 40 km, 1550 nm; 3 to 15 dB link budget; 0.25 dB/km
942 213-001	M-SFP-10-ZR/LC	Singlemode Fiber (SM) 9/125 µm	40 to 80 km, 1550 nm; 11 to 22 dB link budget; 0.25 dB/km
10 Gigabit DAC cable			
942 280-001	SFP-10-DAC-05m	Passive 10 Gigabit DAC cable, 0.5 meter	
942 280-002	SFP-10-DAC-1m	Passive 10 Gigabit DAC cable, 1 meter	
942 280-003	SFP-10-DAC-2m	Passive 10 Gigabit DAC cable, 2 meter	
942 280-004	SFP-10-DAC-4m	Passive 10 Gigabit DAC cable, 4 meter	

MACH1000 Rack Mount Fast/Gigabit/Full Gigabit Switches

Extremely robust network solution for the highest level of both flexibility and security

The MACH1000 devices are designed for the special requirements of industrial automation. They meet the relevant industry standards, offer high port density (up to 28 ports), and provide very high operational and long-term reliability, even under extreme conditions. You set up your own switch according to your requirements regarding the number of ports, transmission speed, media type, connector type, temperature range, voltage range and software variant.

The MACH1040 is also available as a Full Gigabit version with Layer 2 or Layer 3 capabilities, offering 16 Gigabit RJ45/SFP combo ports to provide countless copper/fiber combinations (including optional 4 PoE ports IEEE 802.3af). The fanless design and extremely efficient components are optimized for minimal heat generation and high MTBF (mean time between failure).

The Full Gigabit switches offer sub-10 second boot times and all ports support Precision Time Protocol in accordance with IEEE 1588 v2 and have optional Power over Ethernet (IEEE 802.3af). The Layer 3 software makes it possible to use all Gigabit Ethernet versions as routers.

The Benefits

Exceptional performance – with excellent noise immunity and a wide operating temperature range to maintain communications in the presence of strong electromagnetic fields

High-speed options – using wire-speed technology for extremely fast functions, which include not only static and dynamic routing, but also multicast routing and router redundancy

Easy monitoring – the status of every switch can be monitored locally using indicator contacts, while detailed information can be displayed via a standard web browser and the SNMP interface facilitates the use of network management software such as Industrial HiVision and HiDiscovery

High level of network availability – thanks to redundancy methods such as Fast HIPER Ring, MRP (IEC ring function), trunking, link aggregation, MSTP and RSTP

Markets

- Power Transmission & Distribution
- Transportation
- Military Sector
- Industrial Automation
- Material Handling

Standard Variants

Part Number	Type	Product Description
943 940-001	MAR1020-99MMMMMMMMMMMMMMMMMMMMMMMMMMMFMMHPHH	24 x FE MM-SC, redundant 100-240 V AC power supplies, -40 °C to +85 °C, conformal coating, Classic L2P
943 940-002	MAR1030-4OTTTTTTTTTTTTTTTTTTTTTTTTTFMMHPHH	24 x FE TX + 4x GE SFP, redundant 100-240 V AC power supplies, -40 °C to +85 °C, conformal coating, Classic L2P
942 004-003	MAR1040-4C4C4C4C9999SMMHPHH	16 x FE/GE Combo, redundant 100-240 V AC power supplies, 0 °C to +60 °C, Classic L2P
942 004-001	MAR1040-4C4C4C4C9999SM9HPHH	16 x FE/GE Combo, 100-240 V AC power supplies, 0 °C to +60 °C, Classic L2P
942 004-002	MAR1040-4C4C4C4C9999SM9HRHH	16 x FE/GE Combo, 100-240 V AC power supplies, 0 °C to +60 °C, Classic L3P

Technical Information

Product Description			
Type	**MAR1x2x**	**MAR1x3x**	**MAR1x4x**
Description	Ruggedized managed Ethernet Switches, 19" cabinet mount, fanless design		
Port Type and Quantity*	Up to 24 x FE ports	Up to 4 x GE + 24 x FE ports	16 x FE/GE combo ports
Power over Ethernet (PoE)*	4 x FE PoE ports, 60 W total power budget		4 x GE PoE ports, 60 W total power budget
Interfaces			
V.24 Interface	1 x RJ11 socket		
USB Interface	1 x USB (ACA21-USB adapter)		
Power Requirements			
Operating Voltage*	24 - 48 V DC, 110 - 250 V DC and 100 - 240 V AC (redundant)		
Power Consumption*	7.5 W to 103.5 W	10.5 W to 114.5 W	10 W to 100 W
Ambient Conditions			
Operating Temperature*	0 °C to +60 °C, -40 °C to +85 °C		
Conformal Coating	Optional		
Mechanical Construction			
Dimensions (W x H x D)*	448 x 310/345 x 44 mm		448 x 345 x 44 mm
Weight*	3.9 to 5.4 kg	4.0 to 5.6 kg	4.2 to 4.6 kg
Protection Class	IP30		
Software			
Supported Software Levels*	Classic Layer 2 Professional (L2P)		Classic Layer 2 Professional (L2P), Layer 3 Professional (L3P)
Approvals			
Safety of Industrial Control Equipment*	cUL508		
Hazardous Locations*	ISA12.12.01 class 1 div. 2		
Ship*	DNVGL		
Transportation*	NEMA TS2 (non-PoE models), EN 50121-4, EN 50155		EN 50121-4
Substation*	IEC 61850-3, IEEE 1613		

* Depending on the selected variant

NOTE: Did not find a suitable product?
Please visit our website for more configurations and the complete technical specifications: MACH1020/1030 Series or MACH1040 Series

MACH1000 19" Ruggedized Rack-Mount Switch Configurations

Fast Ethernet Uplink Ports: MAR1020- | MAR1022- | MAR1120- | MAR1122

Configurator

catalog.belden.com

M	A	R	1	0	2	0	-	9	9	M	M	M	M	M	M	V	V	Z	Z	T	T	T	T	T	T	T	T	T	T	9	9	U	G	C	H	P	E	H	X	X	.	X

Design/Models

MAR1020 = Fast Ethernet Uplink
MAR1022 = Fast Ethernet Uplink with 4 Ports PoE
MAR1120 = Fast Ethernet Uplink with Ports at the back (20 Ports max.100 Mbit/s)
MAR1122 = Fast Ethernet Uplink with Ports at the back and 4 Ports PoE (20 Ports max. 100 Mbit/s)

Gigabit Ethernet Ports

99 = None (not present)

Fast Ethernet Ports (1 to 24 Ports)

MM = 2 x Multimode 100 Mbit/s SC
VV = 2 x Singlemode 100 Mbit/s SC
ZZ = 2 x SFP Slots 100 Mbit/s SFP
TT = 2 x Twisted Pair (TX) 10/100 Mbit/s RJ45
99 = None (not present)
RR = 2 x Twisted Pair (TX) 10/100 Mbit/s M12
NN = 2 x Multimode 10 Mbit/s ST
JJ = 2 x Multimode 100 Mbit/s MTRJ
UU = 2 x Singlemode 100 Mbit/s ST
LL = 2 x Singlemode LH 100 Mbit/s SC
GG = 2 x Singlemode LH+ 100 Mbit/s SC

Temperature Range

S = 0°C to + 60°C
U = -40°C to + 85 °C
F = -40°C to + 85°C inclusive Conformal Coating
C = 0°C to + 60°C inclusive Conformal Coating

Power Supply 1 (options)

C = 24/36/48 V DC (spring clip)
G = 110/250 V DC, 110/230 V AC (spring clip)
L = 24/36/48 V DC (plug-in connector)
M = 110/250 V DC, 110/230 V AC (plug-in connector)

Power Supply 2 (options)

C = 24/36/48 V DC (spring clip)
G = 110/250 V DC, 110/230 V AC
L = 24/36/48 V DC (plug-in connector)
M = 110/250 V DC, 110/230 V AC (plug-in connector)(spring clip)

Approvals

H = cUL508, cUL1604 Class 1 Div2, Germanischer Lloyd, IEC 61850-3, IEEE 1613, EN 50121
T = cUL508, cUL1604 Class 1 Div2, IEC 61850-3, IEEE 1613, EN 50121, NEMA TS2, EN50155

Software Version

P = Layer 2 Professional: extended diagnostics, redundancy and security features

Configuration

H = Standard

OEM Type

H = Standard

Software Release

XX.X = Current Software Release

NOTE: The last three part number categories (Configuration, OEM Type and Software Release) are optional.

MACH1000 19" Ruggedized Rack-Mount Switch Configurations

Gigabit Ethernet Uplink Ports: MAR1030- | MAR1032- | MAR1130-| MAR1132

Configurator

catalog.belden.com

M	A	R	1	0	3	0	-	C	C	M	M	M	M	M	M	V	V	Z	Z	T	T	T	T	T	T	T	T	T	T	9	9	U	C	C	H	P	H	H	X	X	.	X

Design/Models

MAR1030 = Gigabit Ethernet Uplink
MAR1032 = Gigabit Ethernet Uplink with 4 Ports PoE
MAR1130 = Gigabit Ethernet Uplink with Ports at the back (20 Ports max.100 Mbit/s)
MAR1132 = Gigabit Ethernet Uplink with Ports at the back and 4 Ports PoE (20 Ports max. 100 Mbit/s)

Gigabit Ethernet Ports

CC = 2 Ports Combo (2 x 10/100/1000TX or 2 x GE SFP)
40 = 4 Ports GE SFP
4T = 4 Ports 10/100/1000TX
0T = 2 Ports GE SFP and 2 Ports 10/100/1000 TX

Fast Ethernet Ports (1 to 24 Ports)

MM = 2 x Multimode 100 Mbit/s SC
VV = 2 x Singlemode 100 Mbit/s SC
ZZ = 2 x SFP Slots 100 Mbit/s SFP
TT = 2 x Twisted Pair (TX) 10/100 Mbit/s RJ45
99 = None (not present)
RR = 2 x Twisted Pair (TX) 10/100 Mbit/s M12
NN = 2 x Multimode 10 Mbit/s ST
JJ = 2 x Multimode 100 Mbit/s MTRJ
UU = 2 x Singlemode 100 Mbit/s ST
LL = 2 x Singlemode LH 100 Mbit/s SC
GG = 2 x Singlemode LH + 100 Mbit/s SC

Temperature Range

S = 0°C to + 60°C
U = -40°C to + 85°C
F = -40°C to + 85°C inclusive Conformal Coating
C = 0°C to + 60°C inclusive Conformal Coating

Power Supply 1 (options)

C = 24/36/48 V DC (spring clip)
G = 110/250 V DC, 110/230 V AC (spring clip)
L = 24/36/48 V DC (plug-in connector)
M = 110/250 V DC, 110/230 V AC (plug-in connector)

Power Supply 2 (options)

C = 24/36/48 V DC (spring clip)
G = 110/250 V DC, 110/230 V AC
L = 24/36/48 V DC (plug-in connector)
M = 110/250 V DC, 110/230 V AC (plug-in connector) (spring clip)

Approvals

H = cUL508, cUL1604 Class 1 Div2, Germanischer Lloyd, IEC 61850-3, IEEE 1613, EN 50121

Software Version

P = Layer 2 Professional: extended diagnostics, redundancy and security features

Configuration

H = Standard

OEM Type

H = Standard

Software Release

XX.X = Current Software Release

NOTE: The last three part number categories (Configuration, OEM Type and Software Release) are optional.

MACH1000 19" Ruggedized Rack-Mount Switch Configurations

Full Gigabit Ethernet Switches: MAR1040- | MAR1042-| MAR1140- | MAR1142

Configurator

catalog.belden.com

Design/Models

MAR1040 = Full Gigabit Ethernet Switch
MAR1042 = Full Gigabit Ethernet Switch with PoE
MAR1140 = Full Gigabit Ethernet Switch with Ports on the rear
MAR1142 = Full Gigabit Ethernet Switch with Ports on the rear, PoE

Gigabit Ethernet Ports

4C4C4C4C999 = 16 RJ45/SFP Combo Ports (support 100 and 1000 Mbit/s SFP)

Temperature Range

S = Standard, 0 °C to + 60°C
C = Standard, 0 °C to + 60°C, Inclusive Conformal Coating
T = Extended, -40°C to + 70°C
E = Extended, -40°C to + 70°C inclusive Conformal Coating

Power Supply 1

L = 24/36/48 V DC (plug-in connector)
M = 110/250 V DC, 110/230 V AC (plug-in connector)

Power Supply 2

L = 24/36/48 V DC (plug-in connector)
M = 110/250 V DC, 110/230 V AC (plug-in connector)
9 = None (not present)

Approvals

H = cUL508, cUL1604 Class 1 Div 2, Germanischer Lloyd, EN 50121-4, EN 50155, NEMA TS2, IEC 61850-3, IEEE 1613

Software Version

P = Layer 2 Professional: extended diagnostics, redundancy and security features
R = Layer 3 Professional: routing capabilities

Configuration

H = Standard

OEM Type

H = Standard

Software Release

XX.X = Current Software Release

NOTE: The last three part number categories (Configuration, OEM Type and Software Release) are optional.

GREYHOUND1020/1030 Rack Mount Fast/Gigabit Switches and Media Modules

Specifically designed for use in harsh industrial environments with a need for cost-effective entry-level devices

The GREYHOUND switches GRS1020/1030 offer a unique combination of price, ports and software features – compared to other Ethernet switches on the market. As network needs change, the switches are highly flexible through field exchangeable port modules. For all-around network protection and uptime, the GREYHOUND GRS1020/1030 switches offer enhanced features through Hirschmann's operating system HiOS. The software feature range includes network management, diagnostics and filter functions, as well as comprehensive security mechanisms.

Unlike standard products or even configurable products from the factory, the GREYHOUND GRS1020/1030 switches are not limited by design. They are offered in four basic versions featuring Fast Ethernet TX, Fast Ethernet SFP and Gigabit Ethernet port options. The basic units offer a media module slot that allows customers to add or change ports in the field, as their network design requirements change in the future. The modules can be ordered in versions from all-copper to all-fiber, depending on the individual needs.

The Benefits

Increased flexibility – designed with the future in mind through customizable and interchangeable media modules to keep pace with evolving network needs

Designed for industrial environments – built to withstand high temperatures, high vibration and electrostatic discharge often found in industrial automation and power utility settings

High network availability – through an extended range of management features including comprehensive security mechanisms, redundancy protocols and diagnostic features

Markets

- Power Generation & Distribution
- Transportation
- Automation Applications
- Material Handling
- Manufacturing

Standard Variants

Part Number	Type	Product Description
942 123-200	GRS1020-16T9SMMV9HHSE2S	16 x FE TX + up to 8 x FE ports via additional media modules, redundant 100-240 V AC power supplies, 0 °C to +60 °C, HiOS L2S
942 123-204	GRS1020-8T8ZSMMV9HHSE2S	8 x FE TX + 8 x FE SFP + up to 8 x FE ports via additional media modules, redundant 100-240 V AC power supplies, 0 °C to +60 °C, HiOS L2S
942 123-201	GRS1030-16T9SMMV9HHSE2S	16 x FE TX + 4 x FE/GE Combo + up to 8 x FE ports via additional media modules, redundant 100-240 V AC power supplies, 0 °C to +60 °C, HiOS L2S
942 123-205	GRS1030-8T8ZSMMV9HHSE2S	8 x FE TX + 8 x FE SFP + 4 x FE/GE Combo + up to 8 x FE ports via additional media modules, redundant 100-240 V AC power supplies, 0 °C to +60 °C, HiOS L2S
942 122-203	GRM20-MMMMMMMMSZ9HHS	8 x FE MM-SC, 0 °C to +60 °C, media module for GRS1020/30
942 122-204	GRM20-MMMMTTTTSZ9HHS	4 x FE TX + 4 x FE MM-SC, 0 °C to +60 °C, media module for GRS1020/30
942 122-200	GRM20-TTTTTTTTSZ9HHS	8 x FE TX, 0 °C to +60 °C, media module for GRS1020/30
942 122-202	GRM20-ZZZZTTTTSZ9HHS	4 x FE TX + 4 x FE SFP, 0 °C to +60 °C, media module for GRS1020/30
942 122-201	GRM20-ZZZZZZZZSZ9HHS	8 x FE SFP, 0 °C to +60 °C, media module for GRS1020/30

Technical Information

Product Description		
Type	**GRS1020/1120**	**GRS1030/1130**
Description	Ruggedized Managed Industrial Switch, fanless design, 19" cabinet mount, modular design	
Port Type and Quantity*	Ports in total up to 24 Basic unit: 16 x FE TX ports, or 8 x FE TX ports + 8 x FE SFP slots, expandable with one media module with 8 x FE ports	Ports in total up to 28 Basic unit: 4 x FE/GE Combo ports + 16 x FE TX ports, or 8 x FE TX ports + 8 x FE SFP slots, expandable with one media module with 8 x FE ports
Interfaces		
V.24 Interface	1 x RJ45 socket	
USB Interface	1 x USB to connect auto-configuration adapter ACA22 (USB)	
Power Requirements		
Operating Voltage*	24 - 48 V DC, 110 - 250 V DC and 110 - 240 V AC (redundant)	
Power Consumption*	7.5 to 18 W	
Ambient Conditions		
Operating Temperature*	0 °C to +60 °C, -40 °C to +70 °C (IEC 60068-2-2 Dry Heat Test +85 °C 16 hours)	
Conformal Coating	Optional	
Mechanical Construction		
Dimensions (W x H x D)	448 x 44 x 315 mm	
Weight*	3.55 to 3.8 kg	
Protection Class	IP30	
Software		
Supported Software Levels*	HiOS Layer 2 Standard (L2S)	
Approvals Configurable		
Safety of Industrial Control Equipment*	EN 60950-1, EN 61131-2, cUL60950-1	
Hazardous Locations*	ISA12.12.01 class 1 div. 2	
Ship*	DNVGL	
Transportation*	EN 50121-4	
Substation*	IEC 61850-3, IEEE 1613	

* Depending on the selected variant

NOTE: Did not find a suitable product? Please visit our website for more configurations and the complete technical specifications: GREYHOUND1020/1030 Series

GREYHOUND GRS1020/GRS1120/GRS1030/GRS1130
Switch Configurations

Configurator

catalog.belden.com

GRS1 0 30-16T9 S M M V9 HH S E 2S XX.X

Design

GRS1 = GREYHOUND 19" Rugged Switch

Port Position

0 = Ethernet ports on front and power supply input on rear
1 = Ethernet ports and power supply input on rear (cabling side)

Data Rate

20 = FE-Switch
30 = FE-Switch with GE-Uplink Ports

Number of Fast Ethernet Ports

16T9 = 16 Fast Ethernet TX Ports
8T8F = 8 Fast Ethernet TX Ports and 8 Fast Ethernet SFP Slots
8T8Z = 8 Fast Ethernet TX Ports and 8 Fast Ethernet SFP Slots

Temperature Range

S = 0°C to + 60 °C
C = Standard, 0°C to + 60 °C, Inclusive Conformal Coating
T = -40°C to + 70°C
E = -40°C to + 70°C conformal coating

Power Supply 1

C = 24 to 48 V DC
M = 110 to 250 V DC and 110 to 240 V AC

Power Supply 2

C = 24 to 48 V DC
M = 110 to 250 V DC and 110 to 240 V AC
9 = No second power supply

Approvals

Z9 = CE,FCC;EU Safety
X9 = Z9,USSafety, Hazardous Location
VY = 79, US Safety, Substation
VT = Z9, US Safety,Substation, Transportation
UY = Z9, US Safety, Marine
UX = Z9, US Safety, Marine, Hazardous. Location
TY = Z9, US Safety, Transportation
Y9 = Z9, US Safety
V9 = Z9, Substation
VU = Z9, US Safety, Substation, Marine
U9 = Z9, Marine
UT = Z9, US Safety, Marine, Transportation
T9 = Z9, Transportation

Customization

HH = Hirschmann Standard

Hardware Configuration

S = Standard

Software Configuration

E = Standard

Software Level

2S = HiOS Layer 2 Standard

Software Version

XX.X= Current Software Release

GREYHOUND1040 Rack Mount Full Gigabit Switches and Media Modules

Designed for use in harsh industrial environments to keep up with your customer's bandwidth needs

The GREYHOUND 1040 switches' flexible and modular design makes this a future-proof networking device. The GREYHOUND1040 switches feature interchangeable media modules and redundant power supplies that allow you to update your live network and keep pace with changing bandwidth and Power over Ethernet (PoE) needs. These switches support up to 28 Gigabit ports, including a 2.5 Gigabit Ethernet fiber option, to balance your speed and cost requirements.

The GREYHOUND1040 switches include 12 fixed ports and also feature two media module slots that enable you to add 8 additional ports each, for a maximum of 28 ports per device. The switch's two power supplies, available in high- or low-voltage options, can be changed in the field for maximum uptime.

For all-around network protection and uptime, they offer enhanced Layer 2 and Layer 3 features through Hirschmann's operating system, HiOS. The software includes comprehensive security, diagnostic and redundancy features. The device's precise time synchronization also enables applications to comply with stringent real-time requirements.

The Benefits

Balance speed with costs – meet high-speed communications requirements in a cost-effective way with a 2.5 Gigabit Ethernet fiber port option

Modify live networks – react quickly to changing bandwidth and power needs by easily adding more ports or changing port types to live networks through the device's media modules

Maximizes uptime – maintain high levels of network availability through redundant field interchangeable and hot-swappable power supplies you can change while under operation

Improved network availability – through an extended range of management features including comprehensive security mechanisms, redundancy protocols and diagnostic features

Markets

- Power Generation & Distribution
- Transportation
- Manufacturing
- Physical Security

Standard Variants

Part Number	Type	Product Description
942 135-003	GRS1042-AT2ZTHH12VYHHSE3AMR	10 x GE TX + 2 x GE SFP + up to 16x GE ports via additional media modules, prepared for redundant 100-240 V AC power supplies, -40 °C to +70 °C, HiOS L3A-MR
942 135-004	GRS1042-6T6ZTHH12VYHHSE3AMR	6 x GE TX + 6 x GE SFP + up to 16x GE ports via additional media modules, prepared for redundant 100-240 V AC power supplies, -40 °C to +70 °C, HiOS L3A-MR
942 135-005	GRS1042-AT2ZTLL12VYHHSE3AMR	10 x GE TX + 2 x GE SFP + up to 16x GE ports via additional media modules, prepared for redundant 24-48 V DC power supplies, -40 °C to +70 °C, HiOS L3A-MR
942 135-006	GRS1042-6T6ZTLL12VYHHSE3AMR	6 x GE TX + 6 x GE SFP + up to 16x GE ports via additional media modules, prepared for redundant 24-48 V DC power supplies, -40 °C to +70 °C, HiOS L3A-MR
942 135-001	GRS1042-6T6ZSHH00Z9HHSE2A99	6 x GE TX + 6 x GE SFP + up to 16x GE ports via additional media modules, prepared for redundant 100-240 V AC power supplies, 0 °C to +60 °C, HiOS L2A
942 135-002	GRS1042-AT2ZSHH00Z9HHSE2A99	10 x GE TX + 2 x GE SFP + up to 16x GE ports via additional media modules, prepared for redundant 100-240 V AC power supplies, 0 °C to +60 °C, HiOS L2A
942 134-001	GMM20-MMMMMMMMSZ9HHS9	8 x FE MM-SC, 0 °C to +60 °C, media module for GRS1040
942 134-002	GMM30-MMMMTTTTSZ9HHS9	4 x GE TX + 4 x FE MM-SC, 0 °C to +60 °C, media module for GRS1040
942 134-003	GMM32-MMMMTTTTSZ9HHS9	4 x GE TX PoE+ + 4 x FE MM-SC, 0 °C to +60 °C, media module for GRS1040
942 134-004	GMM40-TTTTTTTTSZ9HHS9	8 x GE TX, 0 °C to +60 °C, media module for GRS1040
942 134-005	GMM42-TTTTTTTTSZ9HHS9	8 x GE TX PoE+, 0 °C to +60 °C, media module for GRS1040
942 134-006	GMM40-OOOOOOOOSZ9HHS9	8 x GE SFP, 0 °C to +60 °C, media module for GRS1040
942 134-007	GMM40-TTTTTTTTTVYHHS9	8 x GE TX, -40 °C to +70 °C, media module for GRS1040
942 134-008	GMM40-OOOOOOOOTVYHHS9	8 x GE SFP, -40 °C to +70 °C, media module for GRS1040
942 134-009	GMM42-TTTTTTTTTVYHHS9	8 x GE TX PoE+, -40 °C to +70 °C, media module for GRS1040

Technical Information

Product Description	
Type	**GRS1042/1142**
Description	Ruggedized Managed Industrial Switch, fanless design, 19" cabinet mount, modular design
Port Type and Quantity*	Ports in total up to 28 Basic unit: 2 x GE/2.5GE SFP slot + 10 x FE/GE TX ports, expandable with two media module slots with 8 x FE/GE ports each
Power over Ethernet (PoE)*	Up to 16 x PoE ports, max. total power budget 185 W
Interfaces	
V.24 Interface	1 x RJ45 socket
SD Interface	1 x to connect auto-configuration adapter ACA31 (SD)
Out-of-Band Management	1 x RJ45 socket
Power Requirements	
Operating Voltage*	24 - 48 V DC, 60 - 250 V DC and 110 - 240 V AC, 48 - 54 V DC (PoE/PoE+) (redundant)
Power Consumption*	32 W (basic unit with one PSU)
Ambient Conditions	
Operating Temperature*	0 °C to +60 °C, -40 °C to +70 °C (IEC 60068-2-2 Dry Heat Test +85 °C 16 hours)
Conformal Coating	Optional
Mechanical Construction	
Dimensions (W x H x D)	444 x 44 x 354 mm
Weight*	3.6 kg (without PSU and media modules)
Protection Class	IP30
Software	
Supported Software Levels*	HiOS Layer 2 Advanced (L2A), Layer 3 Advanced (L3A)
Approvals Configurable	
Safety of Industrial Control Equipment*	EN 60950-1, EN 61131-2, cUL60950-1
Hazardous Locations*	ISA12.12.01 class 1 div. 2, ATEX Zone 2
Ship*	DNVGL
Transportation*	EN50121-4, EN50155, NEMA TS2
Substation*	IEC 61850-3, IEEE 1613

* Depending on the selected variant

NOTE: Did not find a suitable product? Please visit our website for more configurations and the complete technical specifications: GREYHOUND1040 Series

GREYHOUND GRS1042/GRS1142 Switch Configurations

Configurator

catalog.belden.com

GRS1 0 4 2-6T6Z T H H 0 0 V9 HH S E 3A MR XX.X

Design
GRS1 = GREYHOUND 19" Rugged Switch

Port Position
0 = Ethernet ports on front and power supply input on rear
1 = Ethernet ports and power supply input on rear

Data Rate
4 = FE/GE-Switch

PoE Support
2 = PoE/PoE + Support
(please configure PoE power supply and PoE media modules separately)

Configuration Fixed Ports
AT2Z = 2 x GE/2.5 GE SFP slot plus 10 x FE/GE TX ports
6T6Z = 4 x GE/2.5 GE SFP slot plus 2 x FE/GE SFP plus 6 x FE/GE TX

Temperature Range
S = 0°C to + 60°C
E = -40°C to + 70°C conformal coating
T = -40°C to + 70 °C
C = 0°C to + 60°C conformal coating

Power Supply Input 1*
L = 24 to 48 V DC or 48 to 54 V DC (PoE/PoE+)
H = 60 to 250 V DC and 110 to 240 V AC

Power Supply Input 2*
L = 24 to 48 V DC or 48 to 54 V DC (PoE/PoE+)
H = 60 to 250 V DC and 110 to 240 V AC

Cover Plate Power Supply Input 2
0 = No cover
1 = Cover plate assembled

Cover Plate Media Modules
0 = No cover
1 = 1 x Cover plate assembled
2 = 2 x Cover plate assembled

Approvals
Z9 = CE, FCC, EN 61131, EN 60950
Y9 = Z9 + cUL60950, (UL)
X9 = Z9 + cUL60950, ISA12.12 Class 1 Div. 2, (UL, US haz.loc)
W9 = Z9 + ATEX Zone 2, (EU-haz.loc)
V9 = Z9 + IEC 61850-3, IEEE 1613 (Substation)
VY = Z9 + cUL60950, IEC 61850, IEEE 1613 (UL, Substation)
U9 = Z9 + GL, (Ship)
UY = Z9 + cUL60950, GL (UL, Ship)
UX = Z9 + cUL60950, ISA12.12 Class 1 Div. 2, GL (UL, US-haz.loc, Ship)
UW = Z9 + cUL60950, ATEX Zone 2, GL (EU-haz. loc, UL, Ship)
T9 = Z9 + EN 50121 -4, NEMA TS2 (Train, ITS)
TY = Z9 + cUL60950, EN 50121 -4, NEMA TS2 (UL, Train, ITS)

Customization
HH = Hirschmann Standard

Hardware Configuration
S = Standard

Software Configuration
E = Standard

Software Level
2A = HiOS Layer 2 Advanced
3A = HiOS Layer 3 Advanced

Software Packages
99 = No package
MR = Unicast + Multicast Routing
UR = Unicast Routing

Software Version
XX.X.= Current Software Release

*** NOTE:** Power supplies need to be ordered separatly.

OCTOPUS Unmanaged Fast Ethernet IP67/IP65 Switches

Designed for reliable and secure data transmission and long-term availability in harsh industrial environments

The unmanaged switches in the OCTOPUS family can be used to set up cost-effective connections to Ethernet terminal devices even under the harshest environmental conditions. PoE/PoE+ versions can power terminal devices directly via the Ethernet cable, doing away with the need for additional power supply units.

Unmanaged OCTOPUS Ethernet switches allow fail-safe networks to be installed in a variety of application scenarios and offer maximum network reliability and long-term availability. The switches have an IP67/65 rating, meet the requirements of switching functions in waterproof and dust-tight housings for mounting outside of cabinets and also operate at temperatures ranging from -40 °C up to +70 °C. With 5 up to 10 ports, they deliver a simple-to-install and space-saving solution for smaller industrial networks.

The Benefits

Simple plug & play design – install straight out of the box in areas where space is a premium

Approved for transportation use – meet application-specific regulations for use in railway vehicles, along railway lines, for fire protection in trains and in road vehicles

Robust compact housing – built to withstand demanding conditions (IP67/IP65 rating), including extreme temperatures, high vibration, water and dust

PoE/PoE+ versions – reduce the cabling effort, as the data cable is simultaneously used for the power supply of the end devices

Markets

- Transportation
- Manufacturing
- Machine Building
- Process Automation

Standard Variants

Part Number	Type	Product Description
942 150-001	OCTOPUS 8TX-EEC	Unmanged IP67 Switch, 8 Ports, supply voltage 24 VDC, train approvals
942 151-001	OCTOPUS 8TX EEC PoE	Unmanged IP67 PoE-Switch, 8 Ports, supply voltage 24 VDC, train approvals

Technical Information

Product Description			
Type	**OCTOPUS 8TX-EEC**	**OCTOPUS 8TX PoE-EEC**	**OCTOPUS 5TX EEC**
Description	Configurable IP 67 switch, Ethernet (10 Mbit/s) and Fast-Ethernet (100 Mbit/s)	Configurable IP 67 switch, PoE+, Ethernet (10 Mbit/s) and Fast-Ethernet (100 Mbit/s)	Unmanaged IP65/67 switch, Fast-Ethernet (10/100 MBit/s) ports, electrical Fast-Ethernet (10/100 MBit/s) M12-ports
Port Type and Quantity	8 x FE TX ports, M12 D coding, 4-pole	8 x FE TX ports, M12 D coding, 4-pole	5 x FE TX ports, M12 D coding, 4-pole
Power over Ethernet (PoE)		7 x FE PoE+ ports, 35 W total power budget	
Interfaces			
Power Supply/Signaling Contact	1 x M12 5-pin connector, A coding/no signal contact		
USB Interface	1 x M12 5-pin socket, A coding		n.a.
Power Requirements			
Operating Voltage	24 V DC		12 - 24 V DC
Power Consumption*	4.2 W	Max. 44 W	2.4 W
Ambient Conditions			
Operating Temperature	-40 °C to +70 °C		
Mechanical Construction			
Dimensions (W x H x D)	61 x 201 x 31 mm	61 x 201 x 46 mm	60 x 126 x 31 mm
Weight*	470 g	910 g	210 g
Protection Class	IP65/67		
Approvals			
Safety of Industrial Control Equipment	cUL 61010-1/61010-2-201		cUL508
Transportation	e1, EN 50155, EN 45545, EN 50121-4		e1

* Depending on the selected variant

NOTE: Did not find a suitable product?
Please visit our website for more configurations and the complete technical specifications: OCTOPUS Unmanaged Series

OCTOPUS Managed Fast/Gigabit Ethernet IP67/IP65 Switches and Routers

Meeting the needs of today's data-rich industrial settings even under extreme environmental conditions

Extremely robust hardware, comprehensive redundancy methods and security features all contribute to the high level of safety provided by the managed OCTOPUS family of switches and routers, even under harsh conditions. With an IP65 and IP67 rating, the switches meet the requirements of switching and routing functions in waterproof and dust-tight housings for mounting outside of cabinets and operate at temperatures ranging from -40 °C to +70 °C.

Where space constraints are a consideration, the PoE/PoE+ capabilities reduce cabling, saving both space and associated costs. Even for applications requiring Gigabit speeds, you will find the right switch in the OCTOPUS family.

The supported software comes in Standard and Advanced versions providing management, diagnostic and filtering features, as well as redundancy methods and security mechanisms to varying degrees.

The Benefits

Robust compact housing – ensures the highest industrial protection ratings (IP67/IP65) regarding mechanical stress, humidity, dirt, dust, shock, vibrations, heat and cold

Extended feature range – switches available from 8 to 28 ports, Fast Ethernet and Gigabit Ethernet models, feature vibration-resistant connectors for twisted pair cables or fiber-optic ports

Reduce costs for cabling – switches can be cascaded as often as required – permitting implementation of decentralized networks with short paths to the respective devices

Optimum conformity to standards – ensures maximum long-term viability, meaning that systems can be cost-effectively extended whenever necessary

Markets

- Transportation
- Manufacturing
- Machine Building
- Process Automation
- Automotive

Standard Variants

Part Number	Type	Product Description
942 133-005	OCTOPUS 4GE-24FE-PoE-HV-Train	Managed IP67 PoE-Switch, 28 ports, thereof 4 GE, supply voltage 110 VDC, train approvals
942 133-006	OCTOPUS 4GE-16FE-PoE-HV-Train	Managed IP67 PoE-Switch, 20 ports, thereof 4 GE, supply voltage 110 VDC, train approvals
942 133-007	OCTOPUS 12FE-LV-Trainrouter	Managed IP67 Router, 12 FE ports, supply voltage 24 VDC, train approvals
942 133-008	OCTOPUS 4GE-16FE-PoE-LV-Train	Managed IP67 PoE-Switch, 20 ports, thereof 4 GE, supply voltage 24 VDC, train approvals
942 133-009	OCTOPUS 4GE-8FE-HV-Train	Managed IP67 Switch, 12 ports, thereof 4 GE, supply voltage 110 VDC, train approvals
942 133-010	OCTOPUS 4GE-24FE-PoE-LV-Train	Managed IP67 PoE-Switch, 28 ports, thereof 4 GE, supply voltage 24 VDC, train approvals
942 133-011	OCTOPUS 10TX-LV-Train	Managed IP67 PoE-Switch, 20 ports, thereof 4 GE, supply voltage 24 VDC
942 133-012	OCTOPUS 4GE-16FE-PoE-LV	Managed IP67 PoE-Router 20 ports, thereof 4 GE, supply voltage 110 VDC, train approvals
942 133-013	OCTOPUS 4GE-16FE-PoE-HV-Trainrouter	Managed IP67 Switch, 20 FE ports, supply voltage 24 VDC
942 258-001	OCTOPUS 24GE-HV-Trainrouter	Managed IP67 Router, 24 ports, thereof 24 GE, supply voltage 110 VDC, train approvals

Technical Information

Product Description			
Type	**OS20/24**	**OS30/34**	**OS3-40/44**
Description	Managed IP67/IP65 switches and routers, electrical and optical Fast-Ethernet and Gigabit-Ethernet, electrical M12 ports (TX) or optical IEC ports (FX), PoE+		
Port Type and Quantity*	Up to 28x FE ports, thereof max. 4x FE FX ports	Up to 4x GE and 24x FE ports, thereof max. 4x FE/GE FX ports	Up to 24x GE ports
Power over Ethernet (PoE)*	Up to 15 PoE+ ports, max. PoE power budget 120 W		Up to 24 PoE+ ports, max. PoE power budget 120 W
Interfaces			
V.24 Interface	M12 socket A-coded		
USB Interface	M12 socket A-coded (ACA21-M12/ACA22-M12 adapter)		
Power Requirements			
Operating Voltage*	24 - 48 V DC, 48 to 54 V DC (redundant power input), 72 - 110 V DC, 110 - 230 V AC		24 - 110 V DC, 110 - 230 V AC, 54 V DC
Power Consumption*	22 to 108 W	26 to 108 W	25 to 170 W
Ambient Conditions			
Operating Temperature*	-40 °C to +70 °C		-40 °C to +60 °C, -40 °C to +70 °C
Conformal Coating	Optional		
Mechanical Construction			
Dimensions (W x H x D)*	338/261 x 95 x 186 mm		324/401/478 x 138 x 198 mm
Weight*	3.5 to 4.3 kg		4 to 8 kg
Protection Class	IP65/67		
Software			
Supported Software Levels*	HiOS Layer 2 Standard (L2S), Layer 2 Advanced (L2A), Layer 3 Standard (L3S)		HiOS Layer 2 Advanced (L2A), Layer 3 Advanced (L3A)
Approvals			
Safety of Industrial Control Equipment*	cUL60950-1		EN 62368-1
Ship*	DNVGL		
Transportation*	EN 50155, EN 50121-4, EN 45545, E1		EN 50155, EN 50121-4, EN 45545

* Depending on the selected variant

NOTE: Did not find a suitable product?
Please visit our website for more configurations and the complete technical specifications: OCTOPUS Managed Series

OCTOPUS II Configurations

Configurator

catalog.belden.com

OS34-	15	16	04	T6	T5	T	BB	Z9	99	HH	S	E	3S	XX.X

Design

0S20 = Fast Ethernet Ports
0S30 = FE and GE Ports
0S24 = Fast Ethernet Ports with PoE
OS34 = FE and GE Ports with PoE

PoE Ports

00 = no PoE Ports
10 = 10 x Fast Ethernet PoE Ports
12 = 12 x Fast Ethernet PoE Ports
15 = 15 x Fast Ethernet PoE Ports
08 = 8 x Fast Ethernet PoE Ports
11 = 11 x Fast Ethernet PoE Ports
14 = 14 x Fast Ethernet PoE Ports

Fast Ethernet Ports

08 = 8 x Fast Ethernet Ports
16 = 16 x Fast Ethernet Ports
24 = 24 x Fast Ethernet Ports
12 = 12 x Fast Ethernet Ports
20 = 20 x Fast Ethernet Ports
28 = 28 x Fast Ethernet Ports

Gigabit Ethernet Ports

00 = 0 x Gigabit Ethernet Ports
04 = 4 x Gigabit Ethernet Ports
02 = 2 x Gigabit Ethernet Ports

Type 1 & Type2 Uplink Port

T5 = M12 D-coded
T6 = M12 X-coded
1M = FE, 4 km @ 50 um, 4 km@62.5µm, 1310 nm, IEC 61076-3-106 V1
1L = FE,40-100km@9µm,. 1550 nm, IEC 61076-3-106 V1
1B = GE, 17.5 km, 1310 nm, IEC 61076-3-106 V1
4M = FE, 4 km @50 µm, 4 km@62.5 µm 1310nm, IEC 61076-3-106 V4
4L = FE, 40-100 km @9 µm, 1550 nm, IEC 61076-3-106 V4
4B = GE, 17.5 km, 1310 nm, IEC 61076-3-106 V4
R5 = M12 D-coded with bypass relay
R6 = M12 X-coded with bypass relay
1S = FE, 22.5 km@9 µm, 1310 nm, IEC 61076-3-106V1
1P = FE, 25-62.5km@9µm, 1310 nm, IEC 61076 -3-106 V1
1A = GE,550m@50µm275m@62.5µm,850nm, IEC 61076-3-106 V1
1C = GE, 24 to 68 km, 1550 nm, IEC 61076-3-106 V1
1D = GE, 60 to 116 km, 1550 nm, IEC 61076-3-106 V1
4S = FE, 22.5 km@9 µm, 1310 nm, IEC 61076-3-106 V4
4P = FE, 25-62.5km @9µm, 1310 nm, IEC 61076-3-106 V4
4A = GE,550m@50µm275m@62,5µm,850nm, IEC 61076-3-106 V4
4C = GE, 24 to 68 km, 1550 nm, IEC 61076-3-106 V4
4D = GE, 60 to 116 km, 1550 nm, IEC 61076-3-106 V4

Kind of Local Ports

T5 = M12 D-coded

Temperature Range

T = -40°C to + 70°C

Power Supply and Connector Type

BB = 2 x 24 V DC (16.8 to 30 V DC), M12
HH = 2 x 36/48 V DC (25.2 to 60 V DC), M12
FF = 2 x 24/36/48 V DC (16.8 to 60 V DC), 7/8" 5 poles
N9 = 1 x 72/110 V DC (50.4 V to 138 V DC), 7/8" 4 poles
M9 = 1 x 110/120/220/230 V AC (88 to 265 V AC), 7/8" 3 poles
PP = 2 X 48/54VDC(PoE or PoE+,47 to 57 VDC), M12
QQ = 2x24/36/48VDC(16.8 to 60VDC),M12

Approvals

Z9 = CE, FCC, EN 61131, EN 60950-1
U9 = CE, FCC, EN 61131, EN 60950-1, GL
UT = CE, FCC, EN 61131, EN 60950-1, GL, UL60950-1, EN 50121-4
T9 = CE, FCC, EN 61131, EN 60950-1, EN 50121-4
S9 = CE, FCC, EN 61131, EN 60950-1, EN 50121-4, EN 50155, EN 45545
R9 = CE, FCC, EN 61131, EN 60950-1, E1
Y9 = CE, FCC, EN 61131, EN 60950-1, UL60950-1
UY = CE, FCC, EN 61131, EN 60950-1, GL, UL60950-1
US = CE, FCC, EN 61131, EN 60950-1, GL, UL60950-1, EN 50121-4, EN 50155
TY = CE, FCC, EN 61131, EN 60950-1, EN 50121-4, UL60950-1
SY = CE, FCC, EN 61131, EN 60950-1, EN 50121-4, EN 50155, EN 45545, UL60950-1

Software Packages

99 = Reserved

OEM-Type

HH = Standard
H5 = Extended vibration requirement
H1 = Hirschmann Power Supply Slide
HA = Hirschmann Angled
HE = EMV06

Hardware Configuration

S = Standard
M = Fast MRP (Port 1,2)
P = PRP (Port 1, 2)
H = HSR (Port 1, 2)
D = DLR (Port 1,2)
N = NAT(Port1,2)
R = Real Time TSN
T = Prepared for train backbone(Port 1-4)

Software Configuration

E = Reserved

Software Version

2S = HiOS Layer 2 Standard
2A = HiOS Layer 2 Advanced
3S = HiOS Layer 3 Standard

Software Release

XX.X = Current Software Release

Full Gigabit OCTOPUS III Configurations

Configurator

catalog.belden.com

OS3-44-08 00 08 00 16 00 T6 T6-T N9 S9 UR HH S E 3A XX.X

Design
QS3-30 = Fast Ethernet and Gigabit Ethernet Ports
OS3-34 = Fast Ethernet and Gigabit Ethernet Ports with PoE +
OS3-40 = Gigabit Ethernet Ports
OS3-44 = Gigabit Ethernet Ports with PoE +

Total Number of PoE + Ports
00 = no PoE + Ports
08 = 8 PoE + Ports
16 = 16 PoE + Ports
24 = 24 PoE + Ports

Fast Ethernet PoE+ Ports
00 = no Fast Ethernet PoE + Ports
08 = 8 Fast Ethernet PoE + Ports
16 = 16 Fast Ethernet PoE + Ports

Gigabit Ethernet PoE+ Ports
00 = no Gigabit Ethernet PoE + Ports
08 = 8 Gigabit Ethernet PoE + Ports
16 = 16 Gigabit Ethernet PoE + Ports
24 = 24 Gigabit Ethernet PoE + Ports

Fast Ethernet Ports
00 = no Fast Ethernet Ports
08 = 8 Fast Ethernet Ports
16 = 16 Fast Ethernet Ports

Gigabit Ethernet Ports
08 = 8 Gigabit Ethernet Ports
16 = 16 Gigabit Ethernet Ports
24 = 24 Gigabit Ethernet Ports

10 Gigabit Ethernet Ports
00 = no 10 Gigabit Ethernet Ports

Typ 1 Uplink Port / Typ 2 Uplink Port
T6 = M12 X-coded (see Type 1 Uplink Port)
R6 = M12 X-coded with bypass relay

Temperature Range
T = -40°C to + 70°C

Power Supply
BB = 2 x 24 V DC (16,8 to 30 V DC)
N9 = 1 x 72/110 V DC (50,4 V to 138 V DC)
HH = 2 x 36/48 V DC (25,2 to 60 V DC)
M9 = 1 x 110/120/220/230 V AC (88 to 265 V AC)
QQ = 2 x 24/36/48 V DC(16,8to 60V DC)
PP = 2 x 47 to 57 V (PoE)/2 x 53 to 57 V (PoE+)

Approvals
Z9 = CE,FCC,EN 61131, EN 62368-1
S9 = CE,FCC,EN 61131, EN 62368-1, EN 50121-4, EN 50155, EN 45545
Y9 = CE,FCC,EN61131, EN 6368-1, cUL 61010

Software Packages
99 = Reserved
UR = Unicast Routing
MR = Multicast Routing

Customization
HH = Hirschmann Standard IP67
HS = Hirschmann Standard IP54

Hardware Configuration
S = Standard

Software Configuration
E = Reserved
I = Ethernet/IP
P = Profinet I/O
B = BDEW

Software Version
2A = HiOS L ayer 2 Advanced
3A = HiOS L ayer 3 Advanced

Software Release
XX.X = Current Software Release

EAGLE One Industrial Firewall/VPN Router System

The gold standard for industrial firewalls ensures maximum data protection for production systems

The EAGLE One is a powerful Layer 2 and Layer 3 stateful inspection firewall, which ensures maximum data security for production networks. It is a combination of the familiar proven EAGLE20 software with state-of-the-art hardware and can reliably safeguard your networks or segment them into separate security zones under the defense-in-depth concept.

EAGLE One offers out-of-the-box Stateful Packet Inspection as well as the option of using NAT (Network Address Translation) and VRRP (Virtual Router Redundancy Protocol) to provide your production cells with redundant backbone connections. The configuration and diagnostic features of the EAGLE One also leave nothing to be desired. In addition to the offline configuration tool and web interface, this is guaranteed by such Hirschmann tools as Industrial HiVision, HiView and HiDiscovery. Thanks to its reduced power consumption, it also offers significantly lower operating costs.

The Benefits

Withstand harshest industrial conditions – in almost any environment, especially areas dealing with explosive and hazardous materials

Ease of integration – through a unique "firewall learning mode" that reduces traditional installation risks, such as network interruptions or configuration errors

Maximum security – advanced redundancy features including Layer 2 and Layer 3 functions that ensure switchover to a standby device in the event of a fault or failure

Markets

- Power Transmission & Distribution
- Transportation
- Oil & Gas
- Renewable Energy
- Machine Building
- Mechanical and Plant Engineering

Standard Variants

Part Number	Type	Product Description
942 103-006	EAGLEOne-0200T1T1SDDY90000HHE	2 x FE TX, 12-48 V DC, 0 °C to +60 °C

Technical Information

Product Description	
Type	**EAGLE One**
Description	Industrial Security Router
Port Type and Quantity	2 x FE ports
Interfaces	
V.24 Interface	1 x RJ11 socket serial interface for device configuration or modem attachment
USB Interface	1 x USB socket (ACA21-USB adapter)
Digital Input	1 x plug-in terminal block, 2-pin
Power Requirements	
Operating Voltage	12 - 48 V DC, 24 V AC (redundant power input)
Power Consumption*	5 to 7 W
Ambient Conditions	
Operating Temperature*	0 °C to +60 °C, -40 °C to +70 °C (IEC 60068-2-2 Dry Heat Test +85 °C 16 hours)
Conformal Coating	Optional
Mechanical Construction	
Dimensions (W x H x D)	60 x 145 x 125 mm
Weight	660 g
Protection Class	IP20
Software	
Supported Software Level	Classic Firewall Software
Approvals	
Safety of Industrial Control Equipment*	cUL508
Hazardous Locations*	ISA12.12.01 class 1 div. 2, ATEX Zone 2
Germanischer Lloyd*	DNVGL
Transportation*	EN 50121-4
Substation*	IEC 61850-3, IEEE 1613

* Depending on the selected variant

NOTE: Did not find a suitable product?
Please visit our website for more configurations and the complete technical specifications: EAGLE One Series

EAGLE One Configurations

Configurator

catalog.belden.com

EagleOne-	02	00	T1	T1	T	DD	Z9	0000	HH	E	XX.X.XX

Design/Model

EagleOne = Security Router

Fast Ethernet Ports

02 = 2x 10/100 Mbit/s

Gigabit Ethernet Ports

00 = Not available

Type Port 1

T1 = 1 x Twisted Pair RJ45
M2 = 1 x Multimode SC
S2 = 1 x Singlemode SC/SM

Type Port 2

T1 = 1 x Twisted Pair RJ45
M2 = 1 x Multimode SC
S2 = 1xSinglemode SC/SM

Temperature Range

S = 0°Cto + 60°C
T = -40°Cto + 70°C
E = -40 °C to + 70 °C inclusive Conformal Coating

Voltage Range

DD = 12-48 VDC, 24 VAC

Approvals

Z9 = CE, FCC, EN 61131, EN 60950
Y9 = Z9 + cUL508
X9 = Z9 + cUL508, ISA12.12
W9 = Z9 + ATEX
WX = X9 + ATEX
U9 = Z9 + GL
UY = U9 + cUL508
UX = U9 + cUL508, ISA12.12
UT = U9 + cUL508 + EN 50121-4
T9 = Z9 + EN50121-4
TY = T9 + cUL508
V9 = Z9 + IEC 61850, IEEE 1613
VY = V9 + cUL508
VU = V9 + cUL508, GL
VT = V9 + cUL508, EN 50121

Software Packages

0000 = Reserved

OEM Type

HH = Standard

Configuration

E = Hirschmann Standard Configuration

Software Release

XX.X.XX = Current Software Release

NOTE: The last four part number categories (Software Packages, OEM Type, Configuration and Software Release) are optional.

EAGLE20/30 Multiport Industrial Firewall System

Advanced security features and data inspection within a single device

The EAGLE20/30 Layer 3 firewalls, combined with the latest operating system HiSecOS are designed to eliminate the need for multiple routers. The result can be significant savings in both installation time and costs. These firewalls with convection-cooled, metal DIN Rail housings, come with up to 6 LAN ports and fulfill the requirements of the IEEE 1686 standard, including functions, such as security audit trails and user management with password policies.

To exceed these requirements and be prepared for future standards, several secure configuration interfaces are part of the router's functionality, as is a unique configuration encryption. Deep Packet Inspection (DPI) and Firewall Learning Mode (FLM) features ensure the integrity of packet data, protect networks from malicious intents, and make it easy to configure the device for individual network needs.

The advanced cybersecurity features available in the latest release of the HiSecOS software ensure protection of complex industrial networks in order to increase network uptime.

The Benefits

Modular and customizable – interface configuration options include Fast Ethernet, Gigabit Ethernet and Symmetrical High-speed Digital Subscriber Line (SHDSL)

Increased network security – HiSecOS security features ensure integrity of every packet passing through a network and protect the network from malicious intents

Simple to configure – Firewall Learning Mode (FLM) feature allows for one-click setup to create custom firewall rules for individual network needs

Prepared for future standards – several secure configuration interfaces are part of the router's functionality, as is a unique configuration encryption

Markets

- Automotive
- Machine Building
- Process Automation
- Transportation
- Water & Wastewater
- Food & Beverage
- Oil & Gas
- Machine Building
- Manufacturing
- Energy

Standard Variants

Part Number	Type	Product Description
942 058-001	EAGLE30-4TX/SFP-EEC	2 x GE SFP + 4 x FE TX, 12-48 V DC, -40 °C to +70 °C

Technical Information

Product Description		
Type	**EAGLE20-0400**	**EAGLE30-0402**
Description	Industrial Firewall, Router, Transparent (Bridging)	
Port Type and Quantity*	4 x FE TX ports	4 x FE TX + 2 x FE/GE SFP slot, optional 2 x SHDSL
Interfaces		
V.24 Interface	1 x RJ11 socket (serial interface for device configuration)	
USB Interface	1 x USB socket (ACA22-USB adapter)	
SD Interface	1 x SD socket (ACA31-SD adapter)	
Power Requirements		
Power Consumption*	Max. 19 W	
Operating Voltage*	24 - 48 V DC (redundant power input), 60 - 250 V DC and 110 - 230 V AC	
Ambient Conditions		
Operating Temperature	-40 °C to +70 °C	
Mechanical Construction		
Weight*	1.2 to 1.9 kg	
Dimensions (W x H x D)*	90/98/108/116 x 164 x 120 mm	
Protection Class	IP20	
Software		
Supported Software Levels	HiSecOS	
Approvals		
Safety of Industrial Control Equipment*	cUL 508	
Hazardous Locations*	ISA12.12.01 class 1 div. 2	
Germanischer Lloyd*	DNVGL	
Transportation*	NEMA TS2, EN 50121-4	
Substation*	EN 61850-3, IEEE 1613	

* Depending on the selected variant

NOTE: Did not find a suitable product?
Please visit our website for more configurations and the complete technical specifications: EAGLE20/30 Series

Multi-port Industrial Firewall Configurations

EAGLE20 and EAGLE30 Series

Configurator

catalog.belden.com

E	A	G	L	E	3	0	-	0	4	0	2	2	0	6	T	T	9	9	9	T	C	C	Z	9	H	S	E	3	F	X	X	.	X	.	X	X

Design/Model

EAGLE20 = Security Router
EAGLE30 = Security Router

Fast Ethernet Ports

04 = 4 x 10/100 Mbit/s

Gigabit Ethernet Ports

00 = 0 x 1000 Mbit/s
02 = 2 x 1000 Mbit/s

Type Uplink Ports

206 = All SFP slots
999 = Not available

Remaining Ports

TT = All Twisted Pair

Cellular Ports

9 = Not available

WAN Ports

99 = Not present
H2 = 2 x SHDSL

Temperature Range

S = 0°C to + 60°C
T = -40°C to + 70°C
E = -40°C to + 70°C inclusive Conformal Coating

Voltage Range

CC = 2 x 24/36/48 V DC
K9 = 1 x 60/110/125/220/250 V DC and 110/120/220/230 V AC
KK = 2 x 48-320 VDC, 88 -265 V AC

Approvals

Z9 = CE, FCC, EN 61131, (EN 60950)
Y9 = Z9 + cUL508
X9 = Z9 + cUL508 + ISA 12.12
U9 = Z9 + GL (ABS, BV, DNV, LR)
UY = U9 + cUL508
UX = U9 + cUL508 + ISA 12.12
UT = U9 + cUL508 + EN50121-4
T9 = Z9 + EN50121-4
TY = T9 + cUL508
V9 = Z9 + IEC61850 -3, IEEE1613
VY = V9 + cUL508
VU = V9 + GL(ABS,BV,DNV,LR)
VT = V9 + cUL508 + EN50121 -4

OEM Type

HS = Hirschmann Standard

Configuration

E = Standard Configuration

Software Level

3F = Layer 3 Firewall Software
MB = 3F + Modbus Enforcer
01 = 3F + OPC Classic Enforcer + Modbus Enforcer
OP = 3F + OPC Classic Enforcer

Software Version

XX.X.XX = Current Software Release
03.0.00 = Software Release 3.0

NOTE: The part number categories (OEM Type, Configuration and Software Version) are optional.

Hirschmann EAGLE40

Next-Generation Industrial Firewalls

The multiport EAGLE40 next-generation firewalls offer a comprehensive cybersecurity solution to maximize uptime in today's stringent automated environments.

Hirschmann's ruggedized EAGLE40 product line defies industrial firewall expectations. Featuring Stateful and Deep Packet Inspection combined with next generation multiport configurability for maximum cybersecurity performance.

Hirschmann's multiport EAGLE40 next-generation firewalls deliver a comprehensive cybersecurity solution to ensure maximum protection for production among today's stringent industrial and process automation systems. Evolving alongside data transfer demands, the EAGLE40 devices include more port options with increased bandwidth and encryption capabilities. Supporting both OSPF dynamic routing and VRRP router redundancy, the device is an economically sound approach to maximize uptime, regardless of network throughput. These industrial firewalls incorporate the Hirschmann Security Operating System (HiSecOS) and DPI modules to offer a customizable, around-the-clock solution that meets an infrastructure's unique cybersecurity demands.

The Benefits

Ethernet ports - EAGLE40-03: 3x GbE ports, up to 1 Gbps throughput. EAGLE40-07: 7x GbE ports, up to 5 Gbps throughput

Industrial standards - EAGLE 40 meets process automation standards: ISA-12.12.-01 Class 1 Div. 2 – Haz. Loc, ATEX-95 Category 3G (Zone 2) Meets Energy standards: Substation IEC 61850-3 and IEEE 1613

Flexible management - Industial HiVision, Tripwire Enterprise and Tripwire Log Center could provide all around management and monitoring capabilities

Routing support - EAGLE 40 have dynamic-routing support with OSPF and router redundancy VRRP.

Markets

- Process Automation
- Energy
- Automotive
- Machine Building

Technical Information

Product Description			
Type	**EAGLE40-033T1**	**EAGLE40-03106**	**EAGLE4-07206**
Description	Next-Generation Firewall with Stateful/Deep Packet Inspection and IPSec VPN		
Port Type and Quantity	2 x GbE RJ45 LAN + 1 x GbE RJ45 WAN	2 x GbE RJ45 LAN + 1 x GbE SFP WAN	5 x GbE RJ45 ports + 2 x GbE SFP ports
Port Speeds	10/100/1000 Mbps RJ45 1000 Mbps SFP		10/100/10000 Mbps RJ45 1000 Mbps SFP
More Interfaces			
USB Interface	1 x USB 3.0 ports		2 x USB 3.0 ports
Digital Input*	1 x plug-in terminal block, 2-pin		-
Digital Output	1 x max. 60 V DC or max. 30 V AC, SELV, max. 1A		-
Serial Interface	V.24 console interface		2x DB9 serial interfaces for RS232 protocols
Hardware			
CPU	Intel Atom E3825 @ 1.33GHz		Intel Atom E3950 @ 1.6GHz
Encryption	TPM 2.0 (Hardware based anti-counterfeit, anti-tamper chip)		
Memory	DDR3L 2GB		DDR3L 8GB
Bypass	2 x GbE Copper (2 x 1) with Gen3 Bypass		2 x GbE Copper(2x1) with Gen3 Bypass
Storage	NAND Flash 4GB		64GB SSD storage
Software	HiSecOS		
Power Requirements			
Operating Voltage	2 x 24/36/48 V DC (18 to 60 V DC)		
Power Consumption	max. 15 W		12 - 14 W
Power Supply	1 x plug-in terminal block, 6-pin		
Ambient Conditions			
Operating Temperature	-40°C to +70°C (cold start at -20°C)		
Storage/Transport Temperature	-40°C to +85°C		
Relative Humidity (non-condensing)	10% to 95%		5% to 95%
Protective Paint on PCB	Yes (conformal coating optional, available upon request)		
Mechanical Construction			
Dimensions (W x H x D)	177 x 125.8 x 70 mm		160 x 166 x 53.5 mm
Mounting	DIN Rail 35 mm		
Enclosure	Rugged high-strength sheet metal		
Weight	1960 g		1.6 Kg
Protection Class	IP20		
Approvals			
Basis Standard	CE, FCC, EN 61131		CE, FCC
Safety of Industrial Control Equipment	UL 62368		
Hazardous Locations	ISA-12.12.-01 Class 1 Div. 2 – Haz. Loc, ATEX-95 Category 3G (Zone 2)		-
Substation	-		EN 61850-3, IEEE 1613
Reliability			
MTBF	> 25 years at 55°C (MIL-HDBK-217)		According to Telcordia SR-332 Issue 4 387,288 hours GB at 25°C
Warranty	5 years (standard)		
Software			
Software Version	HiSecOS 3.4		
Security	Firewall rules (incoming/outgoing, management), DoS prevention, IPSec VPN, Audit trail, Role based Access Control, IEEE1686 compliant configuration possible, Deep Packet Inspection (DPI) – OPC and Modbus, Firewall Leaning Mode (FLM)		
Routing	Port based routing, static routing, multinetting, IP masquerading, 1-to-1 NAT, port forwarding, Static and Dynamic ARP enteries, OSPFv2		
Multipoint VPN	IPSec, IKE v1/v2, 3DES, AES (-128, -192, -256), Pre-Shared Key (PSK), X.509v3 Zertifikate, MD5, SHA-1, NAT-T, Hub-and-Spoke		
Management	SNMPv3, SSH2/SFTP, HTTPS, Serial CLI, SNMPv1/2, local and central User Management (RADIUS), HiDiscovery, Industrial HiVision, HiView		
Diagnose	LEDs (Power, Link Status, Data, Status), Signal Contact (24 V DC/1 A), Log File, Syslog, Configuration check RMON (Statistic), Trap for changes and configuration saves		
Configuration	Command Line Interface (CLI), Web Interface, Auto Configuration Adapter (ACA22), HiDiscovery, Industrial HiVision, HiView		
Protocols	HTTPS, SSH, SNMP V1/V2/V3, LLDP		
Redundancy Functions	VRRP (Virtual Router Redundancy Protocol), Tracking Framework for VRRP		
Other Services	NTP Client and Server, DHCP L3 Relay		
Performance	Throughput: Up to 1 Gbit/s		Throughput: Up to 5 Gbit/s

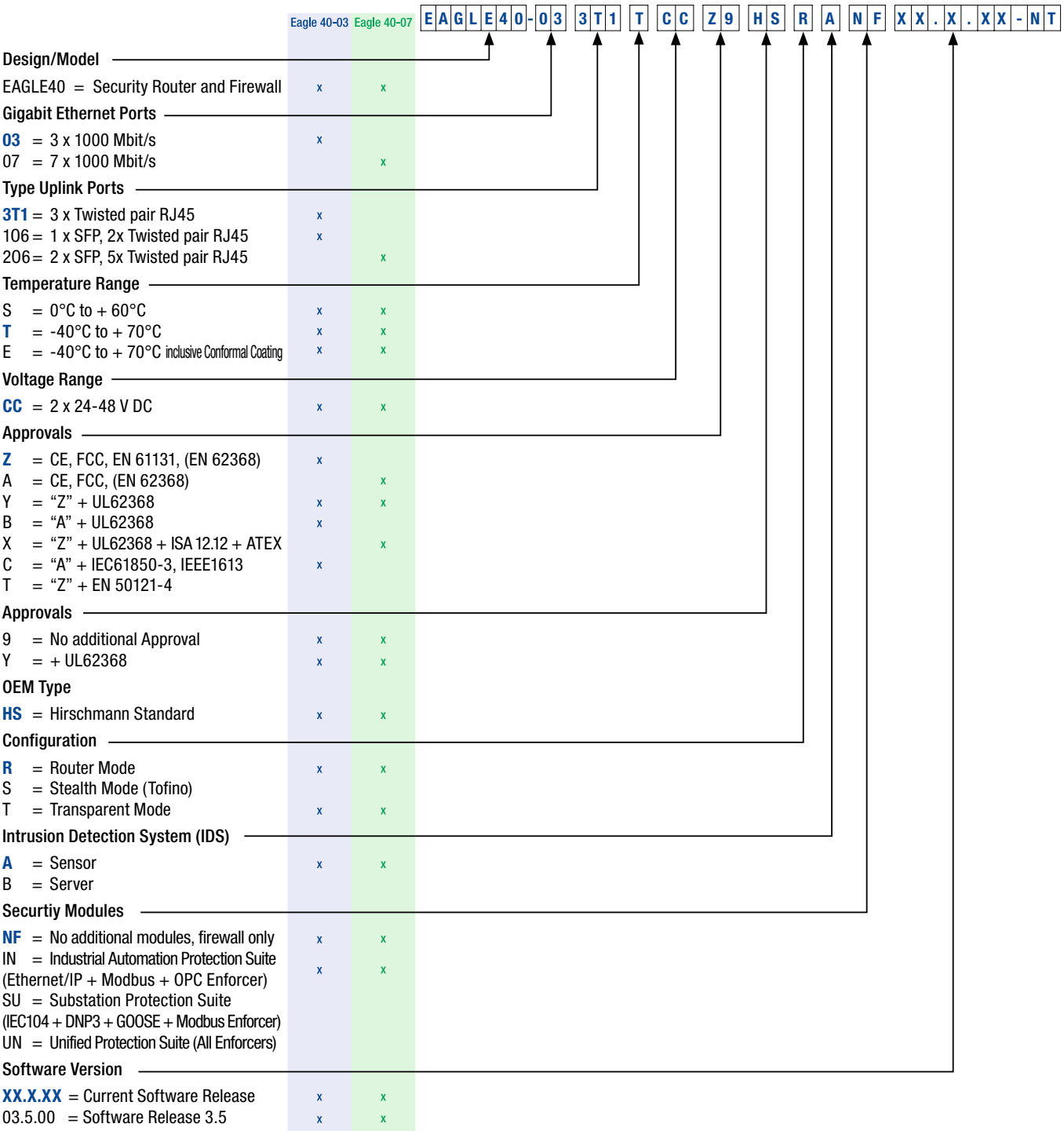
* Available with future software updates.

NOTE: These are the prominent technical specifications. For complete technical specifications visit: www.hirschmann.com

EAGLE40 Configurations

Configurator

catalog.belden.com



Rail Data Diode – Unidirectional Network Appliance

Secures mission-critical Ethernet networks through guaranteed one-way data traffic

In the age of digital information, industrial companies rely more than ever on network access through the public internet to collect data and monitor performance. Eliminating related vulnerabilities – namely cyber threats – is mandatory. The Rail Data Diode enforces one-way data transmissions, blocking potentially infected incoming traffic, while simultaneously offering monitoring capabilities.

The data diode is protected from its severe operating environment with a metal housing, conformal coating, RJ45 and vibration-proof M12 ports, limiting wear-and-tear for a longer lifecycle. The product also has routers with seven ports on either side and a redundant power supply increases the availability of the one-way data path.

The Rail Data Diode is a hardware-based product that physically interrupts an Ethernet network's in-take communication path to ensure that no virus can reach or infect the secure part of a system. As high-security networks are mandatory for applications and processes that must comply with high governance standards, the physical nature of the data diode is easily explained to authorities.

The Benefits

Reliably protect networks – from external cyber threats through singular data flow, while also transferring data out of the secure part of the system in a highly controlled, deterministic manner

Securely transfer Ethernet data – constant Ethernet data transfer, while eliminating access to paths into the secure part of the network, make it impossible for intruders to enter

Easily explain product functionality – the physical nature of the data diode is easily explained to authorities, saving time by simplifying governmental approval processes

Markets

- Process Automation
- Transportation
- Manufacturing
- Power Generation & Distribution

Standard Variants

Part Number	Type	Product Description
942 197-001	Rail Data Diode LV	14 x FE, 24 V DC, 0 °C to +60 °C
942 197-002	Rail Data Diode HV	14 x FE, 110-230 V AC, 0 °C to +60 °C
942 197-003	Rail Data Diode LV Train	14 x FE, 24 V DC, 0 °C to +60 °C, onboard train approvals
942 197-004	Rail Data Diode HV Train	14 x FE, 110-230 V AC, -40 °C to +70 °C, onboard train approvals

Technical Information

Product Description				
Type	**Rail Data Diode LV**	**Rail Data Diode HV**	**Rail Data Diode LV Train**	**Rail Data Diode HV Train**
Description	Data Diode for 24 V DC operating voltage	Data Diode for 110 V DC and 110/230 V AC operating voltage	Data Diode for 24 V DC operating voltage with train approvals	Data Diode for 110 V DC and 110/230 V AC operating voltage with train approvals
Port Type and Quantity	14 FE ports in total, thereof 6 x FE M12 “D”-coded and 8 x FE RJ45			
Interfaces				
V.24 Interface	2 x RJ11 socket			
SD-Card Slot	2 x SD socket (ACA31-SD adapter)			
Power Requirements				
Operating Voltage	24 V DC (redundant power input)	110 V DC, 110 - 230 V AC (redundant power input)	24 V DC (redundant power input)	110 V DC, 110 - 230 V AC (redundant power input)
Power Consumption	23 W	21 W	23 W	21 W
Ambient Conditions				
Operating Temperature	0 °C to 60 °C	0 °C to 60 °C	-40 °C to 70 °C	-40 °C to 70 °C
Mechanical Construction				
Dimensions (W x H x D)	146 x 164 x 120 mm			
Weight	2200 g			
Protection Class	IP20			
Software				
Supported Software Level	HiOS Layer 3 Standard (L3S)			
Approvals				
Safety of Industrial Control Equipment	EN 60950-1			
Transportation			EN50121-4, EN51055, EN 45545-2	EN50121-4, EN51055, EN 45545-2

NOTE: Did not find a suitable product?
Please visit our website for detailed technical information and the complete technical specifications: Rail Data Diode Series

OpenBAT Wireless LAN Devices

Innovative wireless technology that guarantees maximum WLAN availability

The OpenBAT Wireless platform delivers maximum flexibility for highest speed and reliability, even in the most demanding industrial applications. The OpenBAT family includes a broad portfolio of Access Points and Clients that work seamlessly together and comprises of the BAT-R (IP30) and BAT-F (IP65/67) series of WLAN devices.

Both OpenBAT series operate with HiLCOS, which is the most powerful operating system in the automation industry, while providing support for IPv4/6 routing. All OpenBAT devices comply with the IEEE 802.11n WLAN standard – enabling data rates of up to 450 Mbit/s in both the 5 GHz and 2.4 GHz bands by using MIMO antenna technology. This means that the access points – also employable as clients, routers or bridges – can be used to quickly set up meshed networks, wireless distribution systems and point-to-point connections. Also possible are WAN and VPN applications.

Clear Space Wireless

The application of bandpass filters helps to eliminate all interference caused by competing radio signals. The resulting Clear Space wireless delivers greater transmission stability over longer distances without interruptions. The highest performance speed of 450 Mbit/s facilitates applications such as HD video streaming.

BAT Antennas and Accessories

The huge diversity of omnidirectional antenna, directional antenna, vehicle omni antenna and leaky cable offers the ideal solution for your application. With the BAT accessories all components for a complete WLAN installation are available.

The Benefits

Tailored to your individual requirements – a unique platform concept that permits up to 8000 tailor-made solutions, differing in terms of functions, protocols, WLAN and Ethernet ports, interfaces, power supply, installation concept and certifications

High reliability – integrated ESD protection and the option of integrated high-voltage power supply sets new standards in lifetime operational performance

Maximum WLAN availability – thanks to innovative wireless technology and the powerful HiLCOS operating system with extensive management, redundancy and security functions

Industrial design – can be mounted on DIN Rails (BAT-R) or installed on walls or masts in indoor and outdoor (BAT-F) areas

Markets

- Transportation
- Power Transmission & Distribution
- Oil & Gas
- Renewable Energy
- Mechanical Engineering
- Radio Broadcasting Sector

Standard Variants

Part Number	Type	Product Description
942 070-100	BAT-R Dual WLAN 11n 3 x 3 IP30	Rail mounted IP30 with two separate 802.11n WLAN interfaces and 3 x 3 MIMO each. These can be configured in the software as AccessPoint or Client separately. UNII-3 channels for Europe supported (SRD). Antennas included.

Technical Information

Product Description		
Type	**OpenBAT-R**	**OpenBAT-F**
Description	Rugged wireless LAN access point and/or client for use in industrial environments. Robust metal housing	
Port Type and Quantity	1 or 2 GE combo ports, PoE	
WLAN Interfaces	Up to 2 x WLAN interfaces, IEEE 802.11n/a/b/g/h/i	
Radio Technology		
Antenna Connector	3 x MiMo antenna connectors per radio module, reverse SMA socket	3 x MiMo antenna connectors per radio module, N socket
Frequency Band	Supports 2.4 GHz and 5 GHz: 2400 to 2483.5 MHz (ISM) and 5170 to 5850 MHz	
Interfaces		
V.24 Interface	M12 serial port	
USB Interface	USB type A port	M12 ACA
Power Requirements		
Operating Voltage	24 V DC, 48 V DC, 60 - 250 V DC and 110 - 230 V AC	
Power Consumption*	Up to 17 W	
Ambient Conditions		
Operating Temperature*	0 °C to +60 °C, -40 °C to +70 °C	
Conformal Coating	Optional	
Mechanical Construction		
Dimensions (W x H x D)*	120/150 x 136 x 120 mm	311 x 322 x 75 mm
Protection Class	IP30	IP67
Mounting	DIN Rail	Wall and Mast
Approvals		
Safety of Industrial Control Equipment	EN 60950-1, UL 60950-1	EN 60950-1, EN 60950-22, UL 60950-1
Radio/EMC	EN 300 328 (2.4 GHz), EN 301 893 (5 GHz), EN 301 489-1, EN 301 489-17, EN 61000-6-2	
Hazardous Locations	ATEX Zone 2	
Transportation	EN 50155, EN 50121-4, EN 45545, E1	
Substation	EN 61850-3, IEEE 1613	

* Depending on the selected variant

NOTE: Did not find a suitable product?
Please visit our website for more configurations and the complete technical specifications: OpenBAT Series

OpenBAT Configurations

BAT-R DIN Rail Mountable/BAT-F IP65/67 Housing

Configurator

catalog.belden.com

B	A	T	-	R	-	E	U	W	9	9	A	W	W	9	9	A	O	7	T	1	T	9	9	9	H	H	X	X	.	X	X	.	X	X	X	X

Design/Models
BAT-R = DIN rail mountable
BAT-F = IP65/67 housing

Country-Approval*
EU = Europe (CE)
US = USA/Canada (FCC/IC)
Many other country certifications available, Please refer to the online configurator at: **www.hirschmann.com**

Slot 1
W = WLAN module

Slot 2
W = WL AN module
9 = Not mounted

Slot 3
9 = Not mounted

Client/AP
A = Access Point
C = Client

Voltage Range 1
C = 18 to 60 V DC
W = 24 V DC,PoE
P = PoE, 802.3.af
K = 48 to 320 V DC, 90 to 265 V AC

Voltage Range 2
C = 18 to 60 V DC
K = 48 to 320 V DC,90 to 265 V AC
W = 24 V DC,PoE
9 = Not assembled

Approvals 1
F = ANSI/ISA 61010-1 + Class 1 Div2
G = ATEXZone2
I = Substation (EN 61850)
K = Train (EN 50155)
M = Vehicles, E1
9 = No additional approval

Approvals 2
M = Vehicles, E1
9 = No additional approval

Montage
A = Operator access area indoors
B = Service access area indoors
D = Outdoors
E = Sea water proof

Gigabit Ethernet 1
07 = Combo Gigabit Ethernet
05 = Combo Gigabit M12/SFP

Gigabit Ethernet 2
T1 = Twisted Pair/RJ45
T6 = Twisted Pair/M12 x- coded
99 = Not assembled

Temperature Range
S = 0°C to+ 60°C
T = -40°C to +70 °C
E = -40°C to +70°C, inclusive Conformal Coating
K = -40°C to + 55°C

SW-options 1
A = VPN-5
9 = None
B = VPN-50
C = VPN-100

SW-options 2
F = PROFINET
9 = None
E = EtherNet/IP

SW-options 3
D = Public Spot
9 = None
P = PRP
A = AutoWDS

Configuration
H = Standard

OEM Type
H = Standard

Software Release
XX.XX.XXXX = SW Release XX.XX.XXXX

NOTE: The last three part number categories (Configuration, Implementation and Software Release)are optional.
* Country-Approval: shows only a partial extract of the existing approvals

BAT867-R Industrial Wireless Access Points/ Clients

Blends the benefits of high-performance with cost-effective wireless LAN solutions

Transmit data quickly – up to 867 Mbit/s – with the BAT867-R industrial wireless access point. This device supports high-speed IEEE 802.11ac data rates, making it the fastest wireless device in Hirschmann's portfolio. Its rugged design, compact size and select feature set help industrial applications maximize efficiency and performance. The BAT867-R is ideal for industrial settings where space and budgets are limited.

By only including the essential interfaces – one radio, one Ethernet port and one power supply – these access points, which can also be used as clients, routers or bridges, offer a cost-effective, high-speed solution. You also have access to extensive management, routing, remote access, redundancy and security functions with Hirschmann's operating system, HiLCOS.

The Benefits

Fast data speeds – enable high-speed data transmission up to 867 Mbit/s with a IEEE 802.11ac radio module; also backward compatible to a/b/g/n standards

Industrial design – complies with the challenging requirements and approvals of industrial markets and withstands signal interference, vibrations, EMC and more

Cost-effective solution – only pay for the features required by typical industrial WLAN applications to reduce overall costs – one radio, one Ethernet port, one power supply

Remote access – enjoy flexibility by monitoring and operating machines from wireless tablets or smartphones

Markets

- Discrete Automation
- Material Handling
- Machine Building
- Intralogistics

Standard Variants

Part Number	Type	Product Description
942 183-001	BAT867-R WLAN 11ac 2 x 2 IP40	Rail mounted IP40 with 802.11ac WLAN and 2 x 2 MIMO. AccessPoint and Client. Antennas included.

Technical Information

Product Description	
Type	**BAT867-R**
Description	802.11ac Industrial Wireless LAN Access Point/Client, Din Rail mounting
Port Type and Quantity	1 x GE TX port
WLAN Interfaces	1 x WLAN Interface IEEE 802.11a/b/g/n/ac, 2 x 2 MIMO up to 867 Mbit/s gross bandwidth
Radio Technology	
Antenna Connector	2 x RSMA
Range	Depending on type of antenna, frequency range and data rate
Frequency Band	Supporting 2.4 GHz and 5 GHz: 2412 to 2472 MHz and 5180 to 5825 MHz
Modulation	OFDM: BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM
Radio Topology	WLAN access point, bridge, router, point-to-point, client, client-bridge mode
Encryption	IEEE 802.11i/WPA2 with passphrase or 802.1x and hardware-accelerated AES, closed network, WEP64, WEP128, WEP152, user authentication, 802.1x/EAP, LEPS, WPA1/TKIP, fast roaming with Opportunistic Key Caching. Please refer to the HiLCOS data sheet for further information.
Power Requirements	
Operating Voltage	24 V DC
Power Consumption	9 W
Ambient Conditions	
Operation Temperature	-10 °C to +60 °C
Mechanical Construction	
Dimensions (W x H x D)	50 x 148 x 123 mm
Protection Class	IP40
Approvals	
Safety of Information Technology Equipment	EN 60950-1, UL 60950-1
Radio	EN 300 328 (2.4 GHz), EN 301 893 (5 GHz), FCC/CFR 47 part 15, IC (Industry Canada), EN 301 489-1, EN 301 489-17, EN 61000-6-2

NOTE: Did not find a suitable product?
Please visit our website for more configurations and the complete technical specifications: BAT867-R Series

BAT867-R Configurations

Configurator

catalog.belden.com

Product

BAT867-R = IP40-housing

Country-Certification

EU = Europe (CE)

Many other country certifications available.

Please refer to the online configurator at: **www.hirschmann.com**

Slot 1

W = WLAN module

Slot 2

9 = Not installed

Slot 3

9 = Not installed

Client/Access Point

A = Access Point

C = Client

Voltage Range 1

U = 24 V DC

Voltage Range 2

9 = Not installed

Approvals 1

9 = No additional approval

Approvals 2

9 = No additional approval

Mounting

A = Standard

Interface 1

T1 = Twisted Pair/RJ45

Interface 2

99 = Not installed

Temperature Range

L = -10°C to + 60 °C

Software Option 1

9 = None

Software Option 2

9 = None

Software Option 3

9 = None

Configuration

Z = Accessory package

9 = No Accessories

Type

H = Standard Hirschmann

Software Release

XX.XX.XXXX= Current Software Release

NOTE: The part number categories (Configuration and Software Release) are optional.

BAT867-F Industrial Wireless LAN Access Points/Clients

Blends the benefits of ruggedized design with cost-effective wireless LAN solutions

Transmit data quickly – up to 867 Mbit/s – with the BAT867-F industrial wireless access point. This device supports high-speed IEEE 802.11ac data rates, making it the fastest wireless device in Hirschmann's portfolio.

Its ruggedized design and compact size which support IP65/67 protection also supported PoE with no additional power supply. The combination of select feature set help industrial applications maximize efficiency and performance.The BAT867-F is ideal for industrial settings where space and budgets are limited.

These access points, which can also be used as clients, routers or bridges, offer a cost-effective, high-speed solution. You also have access to extensive management, routing, remote access, redundancy and security functions with Hirschmann's operating system, HiLCOS.

The Benefits

High data rate - IEEE 802.11ac technology up to 867Mbps

Single radio - supports dual bands 2.4GHz or 5GHz via 2x2 MIMO antennas

Extensive management - redundancy and security functions with Hirschmann's operation system, HiLCOS

Port support - M12 X-coded Ethernet port supports 10/100/1000 BASE-TX data rates

Power input - 24VDC and PoE(802.3af)

IP Protection - IP65/57 rating protection

Markets

- Railway
- Oil & Gas
- Mechanical Engineering

Technical Information

Name	BAT867-F
Product description	
Description	Ruggedized wireless LAN access point and client with IEEE 802.11ac for use in industrial environments.
Port type and quantity	Ethernet port 1 : M12 X code (10/100/1000BASE-TX data rates)
Radio protocol	IEEE 802.11a/b/g/n/ac WLAN interface as per IEEE 802.11ac, up to 867 Mbit/s gross bandwidth.
Additional radio features	2x2 MIMO
Type	BAT867-F
Order No.	942 276-999
More Interfaces	
Power supply	M12 A code-5pin
Radio technology	
Antenna connector	2 × N-type
Range	Depends on type of antenna, frequency range and data rate.
Frequency band	Supports 2.4 GHz and 5 GHz: 2400 -2483.5 MHz (ISM) and 5170 - 5850 MHz
Modulation	OFDM: BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM
Encryption	IEEE 802.11i / WPA2 with passphrase or 802.1x and hardware-accelerated AES, closed network, WEP64, WEP128, WEP152, user authentication, 802.1x /EAP, LEPS, WPA1/TKIP. Please refer to the HiLCOS data sheet for further information.
Power requirements	
Operating voltage	Voltage Range 1: 24 VDC (18-32 VDC), POE PD
Power consumption	9 W
Power output in Btu (IT) h	31.0 Btu (IT)/h
Ambient conditions	
Operating temperature	Standard:-10°C ... 60°C; Extended:-40°C ... 70°C
Note	Temperature of the surrounding air.
Storage/transport temperature	-40 °C ... 85 °C
Relative humidity (also condensing)	10 % ... 100 %
MTBF	2475860h for Telecordia SR-332 Issue 3: Gb 25 °C
Protective paint on PCB	Yes (conformal coating only for temperature code “E”)
Software	
Software features	High performance operating system for the Hirschmann BAT products. Supports all WLAN functions, routing, firewall, VLAN, and redundancy. IPv6 in preparation. All BAT867-F devices operate as either standalone access points or as managed access points in combination with a BAT WLC Controller. Please refer to the HiLCOS data sheet for further information.
Mechanical construction	
Dimensions (W x H x D)	170 x 150 x 50 mm
Mounting	Wall mounting
Weight	1 Kg
Protection class	IP65/67
Approvals	
Basis Standard	CE, FCC
Safety of industrial control equipment	EN62368-1, EN60950-22*
Radio	EN 300 328 (2.4 GHz) EN 301 893 (5 GHz) EN 302 502 (5.8 GHz) , EN 301 489-1, EN 301 489-17
Railway norm	EN 50121-4*
Scope of delivery and accessories	
Scope of delivery	1 × premounted protection cap (M12, plastic) for supply voltage connection; 2 × per WLAN Module premounted protection cap (plastic) for N socket; 2 × per WLAN module Antennas (BAT-ANT-N-3AGN-IP67); 1 × per WLAN module 50 Ω terminators for closing free antenna connections; 1 × Included X-coded M12 plug for Ethernet port 1; 1 × Included M12 power supply plug ELKA 5012 PG7; (Available with configuration “Z”)
Accessories to order separately	External antennas; External surge protection; Cables 2m, 5m, 15m

NOTE: *available with outdoor variants. These are the prominent technical specifications. For complete technical specifications visit: www.hirschmann.com

BAT867-F Configurations

Configurator

catalog.belden.com

B	A	T	8	6	7	-	F	E	U	W	9	9	A	W	9	9	9	A	T	6	9	9	L	9	9	9	Z	H	X	X	.	X	X	.	X	X	X	X

Product
BAT867-F = IP65/67 housing

Country-Certification
EU = Europe (CE)
US = USA/Canada (FCC/IC)
CN = China

Slot 1
W = WLAN module

Slot 2
9 = Not mounted

Slot 3
9 = Not mounted

Client/Access Point
A = Access-Point

Voltage Range 1
W = 24 VDC, PoE. P = PoE only

Voltage Range 2
9 = Not mounted

Approvals 1
9 = No additional approvals J = Railway (EN50121-4)

Approvals 2
9 = No additional approvals

Mounting
A = Indoor **B** = Indoor + Outdoor

Interface 1
T6 = 10/100/1000Mbps M12

Interface 2
99 = Not mounted

Temperature Range
L = -10°C to + 60°C E = -40°C to + 70°C conf. Coating T = -40°C to + 70°C

Software Option 1
9 = None

Software Option 2
9 = None

Software Option 3
9 = None

Configuration
Z = Accessory pack
9 = No Accessories

Type
H = Standard Hirschmann

Software Release
XX.XX.XXXX = Current Software Release

NOTE: The part number categories **(Configuration** and **Software Release)** are optional.

BAT-C2 Compact Wireless LAN Client and Access Point

Delivers a cost-effective practical wired-to-wireless solution for industrial applications in challenging environments

The BAT-C2's compact design and low weight are unprecedented in its class of ruggedized industrial WLAN devices. It is optimized for integration either into mobile units or stationary machines. When used as a mobile client it delivers fast roaming at an enterprise security level. When used stationary it allows for simple integration and automatic control of its Access Point functionality to deliver wireless access locally around a machine.

Customers need connectivity solutions that can keep up with the demands of today's increasingly automated industrial environments. Hirschmann's BAT-C2 WLAN Client and Access Points offer the market's most configurable and compact design for integration with today's modern robots, AGVs or machines - all while enhancing network speed and security with 802.11ac technology.

The Benefits

Extremely cost-effective – optimized for modern robot, AGV and machine building applications and focused on practicability for the modern factory

Save valuable space – thanks to its compact dimensions, storage space can be kept to a maximum and its low weight saves lifetime of moving components

Cross-vendor – designed to run in every WLAN environment allows you to confidently pick the best products for your application

Ruggedized – IP65 water and vibration proof and will handle any environment confidently

Markets

- Robots, AGVs
- Discrete Automation
- Machine Building
- Transportation

Standard Variants

Part Number	Type	Product Description
942 249-001	BAT-C2 Europe	802.11ac. Small formfactor. WLAN Client with fast roaming. Focused Access Point functionality. IP65. Europe variant.
942 249-002	BAT-C2 North-America	802.11ac. Small formfactor. WLAN Client with fast roaming. Focused Access Point functionality. IP65.North-America variant.

Technical Information

Product Description	
Type	**BAT-C2**
Description	Compact WLAN Client and AccessPoint with 11ac technology and fast roaming
Port Type and Quantity	1 x FE TX port, M12 D-Coded Socket Female
WLAN Interfaces	1 x WLAN Interface IEEE 802.11a/b/g/n/ac
Interfaces	
Antenna Connector	2 x RP-SMA Female Socket
Reset Button	yes, can be disabled
Power Requirements	
Operating Voltage	12 - 24 VDC
Power Consumption	Max. 3 W
Ambient Conditions	
Operating Temperature	-40°C to +70 °C
Mechanical Construction	
Dimensions (W x H x D)	189 x 124 x 49 mm
Weight	230 g
Protection Class	IP65
Mounting	Wall or table mounting
Approvals	
Safety of Industrial Control Equipment	EN 61131
Radio	Europe, USA/Canada, China

NOTE: Did not find a suitable product?
Please visit our website for detailed technical information and the complete technical specifications: BAT-C2 Series

BAT450-F Industrial Wireless LAN Access Point

Complete solution to deploy a reliable and customizable wireless infrastructure

The BAT450-F family of wireless access points features multiple interface configurations. The customized robust design allows you to select the elements you need based on the unique requirements of your network and its environmental conditions.

The device's connection options include WLAN, Wireless Wide Area Network (WWAN), like LTE and Ethernet interfaces. The BAT450-F access points also feature Hirschmann's HiLCOS software with extensive management, redundancy and security functions, as well as IPv4/6 routing. The wireless devices can operate as an Access Client, Access Point or managed Access Point in combination with the BAT Controllers.

The BAT450-F provides ultra-reliable and fast roaming for the modern train-to-trackside applications. Whether it transmits security camera footage or CBTC – train control data – it delivers data on time and operates around the clock in extreme heat or cold for years.

The Benefits

Industrially hardened and compact design – meets the IP65/67 protection class and operates under extreme temperatures to enable mounting on masts or walls in a variety of harsh indoor and outdoor environments

Secure operating system – runs on Hirschmann's HiLCOS software to ensure maximum network availability and data security across wireless connections

Custom configurations – for the unique needs of industrial networks to confidentially maintain connection uptime

Variety of interfaces – enable a wide range of configurable network connections for LAN, WLAN and WWAN/Cellular

Markets

- Transportation
- Process Automation
- Oil & Gas
- Power Transmission & Distribution
- Machine Building
- Solar and Wind Power
- Water and Wastewater
- Food & Beverage

Standard Variants

Part Number	Type	Product Description
942 142-100	BAT450-F WLAN 11n 3 x 3 IP67	IP67 802.11n WLAN and 3 x 3 MIMO. AccessPoint and Client. Antennas included.

Technical Information

Product Description	
Type	**BAT450-F**
Description	Dual Band Ruggedized Industrial Wireless LAN Access Point/Client with IEEE 802.11n for installation in harsh environment
Port Type and Quantity	Up to 2 x GE TX ports, M12, X-coded
WLAN Interfaces	Up to 2 x WLAN interfaces IEEE 802.11a/b/g/h/n, 3 x 3 MIMO up to 450 MBit/s gross bandwidth
Radio Technology	
Antenna Connector	For each WLAN module: 3 x N socket
Range	Depending on type of antenna, frequency range and data rate
Frequency Band	Supporting 2.4 GHz and 5 GHz: 2400 to 2483.5 MHz (ISM) and 5170 to 5850 MHz
Modulation	20M0F7D (DSSS/OFDM) @ 2.4 GHz, 20M0G7D (OFDM) @ 5 GHz, MCS 0 - MCS23
Radio Topology	WLAN access point, bridge, router, point-to-point, client, client-bridge mode, AutoWDS, fixed mesh with RSTP
Encryption	IEEE 802.11i/WPA2 with passphrase or 802.1x and hardware-accelerated AES, closed network, WEP64, WEP128, WEP152, user authentication, 802.1x/EAP, LEPS, WPA1/TKIP, fast roaming with Opportunistic Key Caching. Please refer to the HiLCOS data sheet for further information.
Interfaces	
V.24 Interface	M12, A-coded, configuration interface or for automatic P2P connections verified over V.24 (train carriage coupling)
Power Requirements	
Operating Voltage	24 V DC, PoE powered device according to IEEE 802.3af
Power Consumption*	Up to 13 W
Ambient Conditions	
Operation Temperature	-40 °C to +70 °C
Mechanical Construction	
Dimensions (W x H x D)	261 x 189 x 55 mm
Protection Class	IP65/IP67
Mounting	Wall and mast
Approvals	
Safety of Industrial Control Equipment	EN 60950
Radio	EN 300328, EN 301893, UL60950
Transportation	E1 (pending), EN 50155

* Depending on the selected variant

NOTE: Did not find a suitable product?
Please visit our website for more configurations and the complete technical specifications: BAT450-F Series

BAT450-F Configurations

Configurator

catalog.belden.com

B	A	T	4	5	0	-	F	-	E	U	W	W	9	A	W	9	K	9	A	T	6	V	4	T	C	9	A	Z	H	X	X	.	X	X	.	X	X	X	X

Product

BAT450-F = IP65-/67-housing

Country-Certification

EU = Europe (CE)

Many other country certifications available.

Please refer to the online configurator at: ww.hirschmann.com

Slot 1

W = WLAN module

Slot 2

W = WLAN modules 9 = Not installed

Slot 3

9 = Not installed

Client/Access Point

A = Access Point C = Client

Voltage Range 1

W = 24VDCandPoE N = 110 VDC

Voltage Range 2

9 = Not installed

Approvals 1

K = Train (EN 50155) 9 = No additional approval M = Vehicles, E1

Approvals 2

9 = No additional approval

Mounting

A = Standard

Interface 1

T6 = 10/100/1000 Mbit/s M12

Interface 2

V4 = V.24/ACA 11
T6 = 10/100/1000 Mbit/s M12
T7 = 10/100/1000 Mbit/s M12+V.24/ACA 11
99 = Not installed

Temperature Range

T = -40°Cto+70°C E = -40°Cto+70°C, conformal coating M = -30°Cto+70°C, conformal coating
A = -25°Cto+70°C N = -25°Cto+70°C, conformal coating

Software Option 1

A = VPN-5
C = VPN-100
B = VPN-50
9 = None

Software Option 2

9 = None

Software Option 3

D = Public Spot
A = AutoWDS
P = PRP
9 = None

Configuration

Z = Accessory package 9 = No Accessories

Type

H = Standard Hirschmann

Software Release

XX.XX.XXXX = Current Software Release

NOTE: The part number categories (Configuration and Software Release) are optional.

OWL LTE M12 Industrial Cellular Routers

Single box cellular routers enable high-speed cellular connectivity and remote access in varying environmental conditions

The feature-rich OWL LTE M12 router was designed for the specific needs of the rail and public transportation sectors, according to EN 50155 standards, with a wall-mounted, vibration-proof housing and M12 connections. From its more ruggedized, vibration-proof housing and connections to its distinct industry-specific approvals, the OWL LTE M12 delivers fast connectivity and reliable remote access.

With reliable and fast remote access, the Industrial Cellular Router can maintain your network and manage alarms remotely from an office location, always having access to the diagnostic data needed to make real-time decisions.

To guarantee the highest network availability, redundancy is provided through dual SIM cards and two Ethernet ports. Best-in-class integrated firewall protection also addresses growing security concerns.

Even with no product knowledge or training, it's easy to configure the OWL LTE M12 due to a user friendly web interface. Its open LINUX platform enables advanced customization through scripting or user modules.

The dead reckoning function delivers you position information even if you lose the GPS connectivity. A highly advanced odometry algorithm optimized for trains and metros allows you to track your vehicle even inside tunnels and underground.

The Benefits

Fast wireless connectivity and reliable remote access – provide the best wireless experience and manage networks remotely through fast and reliable wireless cellular technologies, including LTE, UMTS/HSPA+ and GSM/GPRS/EDGE technologies

Optimal performance – achieve high network availability in harsh environmental settings with this ruggedly-designed, feature-rich cellular router

Easy to configure and customize – install and adjust this device with minimal product knowledge. It's open LINUX platform also allows for advanced customization

Rugged, vibration-proof design – meet the challenging rail environment standards, defined by EN 50155

Markets

- Railway and Public Transportation
- Voice & Video over IP
- Passenger Information Systems (PIS)
- Session initiation protocol (SIP)
- Closed-circuit televisions (CCTVs)
- Onboard Internet
- Robots and Cranes

Standard Variants

Part Number	Type	Product Description
942 147-002	OWL LTE M12	4G/LTE Gateway and Router with 150Mbit (CAT4). IP40. EN50155 for Rolling Stock. VPN. GPS with dead reckoning.

Technical Information

Product Description	
Type	**OWL LTE M12**
Description	LTE, UMTS, GSM Router
Port Type and Quantity	2 x FE TX, M12 "D"-coded, 4-pin
Radio Technology	
Antenna Connector	3 x SMA jack antenna connectors
Antenna Configuration	Main + Rx Div and MIMO DL 2x2 + GPS (supports active/passive antennas)
Frequency Band	Dual Band GSM (2G): 900/1800 Dual Band UMTS (3G): 900/2100 MHz FDD-Band (8,1) Penta Band LTE (4G): 800/900/1800/2100/2600 MHz FDD-Band (20,8,3,7,1)
Transfer Rate (max.)	LTE CAT4: 150 Mbit/s Download, 50 Mbit/s Upload DC-HSPA+: 42 Mbit/s
SIM-cards	Two SIM card holders, Dual-SIM fail over functionality
Interfaces	
USB Interface	2.0 USB host, 5 pin A-coded M12
I/O Interface	2 x opto-coupled digital Inputs (max. 60 V DC , max. 7 mA) 2 x opto-coupled digital Outputs (max. 60 V AC/DC, max. 300 mA), 8-pin A-coded M12
Ethernet interface	2 x 10/100BASE-TX ports, 4-pin D-coded M12
Serial Interface	1 x RS232, 8-pin A-coded M12 (TXD, RXD, DCD, DTR, DSR, RTS, CTS and GND)
SD Interface	1 x MicroSD, SDHC up to 32 GB, SDXC from 32 GB up to 64 GB
GPS Interface	Protocol : NMEA-0183 V3.10 Frequency: 1575.42 MHz Sensitivity: -162 dBm
Power Requirements	
Operating Voltage	12 - 48 V DC, PoE+ powered device 802.3at
Power Consumption	6.5 W
Ambient Conditions	
Operation Temperature	-40 °C to +70 °C
Mechanical Construction	
Dimensions (W x H x D)	203 x 58 x 113 mm
Weight	855 g
Protection Class	IP 40
Mounting	Wall mounting
Approvals	
Safety of Industrial Control Equipment	EN 60950-1
Radio	EN 301 511, EN 301 908-1 & EN 301 908-2, EN 62311
Transportation	EN 50155, EN 50121-4, EN 45545-2 HL3, E8

NOTE: Did not find a suitable product?
Please visit our website for detailed technical information and the complete technical specifications: OWL LTE M12 Series

Hirschmann OWL 4G Family

Next-Generation Cellular Routers

We are living in an increasingly connected world , which comes with an increase in industrial network performance and security demands. The Hirschmann OWL 4G family of cellular routers and gateways offers high-speed wireless connectivity and secure remote access to meet the needs of an IIoT world. Compatible with cellular frequencies around the globe, the OWL 4G family is specifically designed to support next-level security and round-the-clock cellular connectivity across virtually any environment. Its edge computing configuration

allows industrial customers to monitor and troubleshoot machines remotely,without going on site. These features, along with its web interface that enables advanced customization, makes the OWL 4G family a flexible solution for many different applications

Benefits:

High-speed connectivity : wireless connectivity through 4G, LTE, HSPA+, UMTS, EDGE, or GPRS technology

Variety of Interface: Two Ethernet 10/100 Mbit/s ports, RS232 and RS485 interfaces, and built-in digital I/O connectivity

Rugged design: Robust metal cover with DIN and wall mount options

Wide Operation Range: Operating temperature range of-40°C to +65°C

Optimal Performance: Embedded GPS and optional dead-reckoning functionalities for innovative navigation and location tracking

Security Communication: Fast VPN tunnel creation to ensure safe communications

Wi-Fi Ready: Optional built-in Wi-Fi module compatible with IEEE 802.11

a/b/g/n/ac standards

Highly Customizable: Configurable web interface with customizable functionalities

Hirschmann's OWL 4G family of routers and gateways are designed to address the high-speed wireless connectivity needs of various industrial applications.

Your Benefits

Hirschmann's OWL 4G family of routers and gateways enable secure, high-speed wireless connectivity and remote access for industrial applications in an increasingly connected world.

Edge computing configuration reduces infrastructure costs by providing an effective way to monitor and troubleshoot machines – without going on site or creating connections where wired networks are not feasible.

The expanded OWL 4G family covers all global frequencies. With variants for Europe, North America and Australia, organizations will be equipped to break into new markets with the ability to establish a secure connection anywhere in the world.

Application

In today's increasingly digital-connected world, the Hirschmann OWL 4G family was specifically designed to provide a next level of security and round-the-clock cellular connectivity for industrial customers.

Its comprehensive set of features make this gateway the ideal solution for the wireless connection of industrial M2M and IoT applications such as kiosks, industrial PCs, HMIs, traffic controllers, meters, UPS systems, and more. With upload speeds of up to 50 Mbps and download speeds of up to 150 Mbps, the router provides ample bandwidth for high data applications, such as CCTV or public Wi-Fi hotspots.

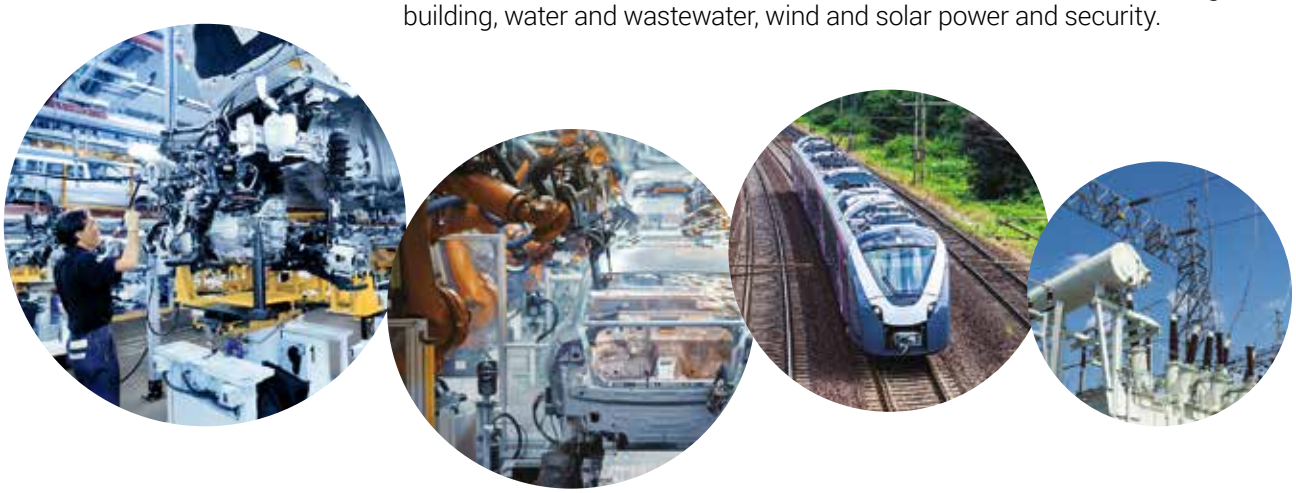
With an optional built-in Wi-Fi module, the routers are perfect for on-board Wi-Fi transport applications. Additional diagnostic features also provide automatic monitoring of the wireless and wired connections, automatic restart in case of connection losses, and a hardware watchdog that monitors the router status, ensuring continuous network uptime.

OWL 4G allows for advanced application and function customization – depending on various IoT needs – with its open Linux platform.

Markets

Due to its ability to securely and reliably connect an Ethernet network to the Internet, the OWL 4G family of routers is a key solution for companies taking advantage of IIoT capabilities. They offer specific value in the railway and public transportation sectors, where high-speed wireless and reliable remote access are critical, despite exposure to harsh conditions.

OWL 4G solutions are also relevant for other industrial sectors, including machine building, water and wastewater, wind and solar power and security.



Standard Variants

Part Number	Type	Product Description
942 285-001	OWL 4G Australia	LTE Ethernet Gateway, Australia, New Zealand, VPN, Dual SIM, Serial, IO, Vehicles (E-Mark)
942 285-101	OWL 4G Australia+WLAN	LTE Ethernet Gateway, Australia, New Zealand, WLAN, VPN, GPS, Dual SIM, Serial, IO,Vehicles (E-Mark)
942 283-001	OWL 4G Europe	LTE Ethernet Gateway, Europe, VPN, Dual SIM, Serial, IO, Vehicles (E-Mark)
942 283-101	OWL 4G Europe+WLAN	LTE Ethernet Gateway, Europe, WLAN, VPN, GPS, Dual SIM, Serial, IO, Vehicles (E-Mark)
942 284-001	OWL 4G North America	LTE Ethernet Gateway, USA, Canada, VPN, Dual SIM, Serial, IO, Vehicles (E-Mark)
942 284-101	OWL 4G North America+WLAN	LTE Ethernet Gateway, USA, Canada, WLAN, VPN, GPS, Dual SIM, Serial, IO, Vehicles (E-Mark)
942 286-001	OWL LPWAN LTE	Cat. M1/NBIoT Ethernet Gateway, USA, Canada, VPN, Dual SIM, Serial, IO

Technical Information

Product Description			
Type	**OWL 4G**	**OWL 4G+WLAN**	**OWL LPWAN**
Description	Industry 4.0 and Industrial IoT Cellular Router and Gateway.	Optimized for 4G distributed applications with edge pre-computing. VPN and open extendable Linux. Integrated WLAN 802.11ac.	Optimized for LTE-M distributed applications with edge pre-computing. VPN and open extendable Linux.
Port Type and Quantity	2 x Ethernet, 2 x Antenna, 2 x SIM, 1 x Power, 2 x I/O, 2 x Serial	2 x Ethernet, 2 x Antenna, 1 x GPS, 2 x SIM, 1 x Power, 2 x I/O, 2 x Serial, 2 x WLAN	2 x Ethernet, 1 x Antenna, 2 x SIM, 1 x Power, 2 x I/O, 2 x Serial
Radio Technology			
Antenna Connector	2 x SMA Female (Cellular, Diversity)	3 x SMA Female (Cellular, Diversity, GPS), 2 x RP-SMA Female (WLAN)	1 x SMA Female (Cellular)
Frequency Band*	GPRS/EDGE (2G): 900/1800 MHz, UMTS/HSPA+ (3G): 900(Band 8) / 2100(Band 1) MHz, LTE (4G): 700(Band 28A) / 800(Band 20) / 900(Band 8) / 1800 (Band 3) / 2100(Band 1) / 2300(Band 40) / 2500(Band 41) / 2600(Band 7, Band 38) MHz	GPRS/EDGE (2G): 900/1800 MHz, UMTS/HSPA+ (3G): 900(Band 8) / 2100(Band 1) MHz, LTE (4G): 700(Band 28A) / 800(Band 20) / 900(Band 8) / 1800 (Band 3) / 2100(Band 1) / 2300(Band 40) / 2500(Band 41) / 2600(Band 7, Band 38) MHz	GPRS/EDGE (2G): 850/900/1800/1900 MHz, LTE 4G Cat. M1 and NBIoT: 700(Bands 12,13,28) / 800(Band 20) / 850(Bands 5,18,19,26) / 900(Band 8) / 1700(Band 4) / 1800(Band 3) / 1900(Bands 2,39) / 2100(Band 1) MHz
Transfer Rate (max.)	LTE CAT4: 150 Mbit/s Download, 50 Mbit/s Upload	LTE CAT4: 150 Mbit/s Download, 50 Mbit/s Upload	LTE Category M1: 375 Kbps Upload and Download
SIM-cards	Two SIM card holders, Dual-SIM fail over functionality	Two SIM card holders, Dual-SIM fail over functionality	Two SIM card holders, Dual-SIM fail over functionality
Interfaces			
I/O Interface	1 x 2-pin power connector 1 x 10-pin connector	1 x 2-pin power connector 1 x 10-pin connector	1 x 2-pin power connector, 1 x 10-pin connector
Ethernet Interface	2 x Ethernet: 10/100 Mbit/s (RJ45)	2 x Ethernet: 10/100 Mbit/s (RJ45)	2x Ethernet: 10/100 Mbit/s (RJ45)
Serial Interface	On 10-pin panel socket (connector included): RS485, RS232 , Serial2TCP , Serial2UDP	On 10-pin panel socket (connector included): RS485, RS232 , Serial2TCP , Serial2UDP	On 10-pin panel socket (connector included): RS485, RS232 , Serial2TCP , Serial2UDP
SD Interface	Flash memory (512MB User data storage, 830MB User module storage)	Flash memory (512MB User data storage, 830MB User module storage)	Flash memory (512MB User data storage, 830MB User module storage)
Power Requirements			
Operating Voltage	9 V DC to 36 V DC,	9 V DC to 36 V DC,	9 V DC to 36 V DC,
Power Consumption	Idle 2.5 W, Average 4 W, Maximum 11 W	Idle 2.5 W, Average 4 W, Maximum 11 W	Idle 2.5 W, Average 4 W, Maximum 11 W
Ambient Conditions			
Operation Temperature	-40 °C to + 65°C	-40 °C to + 65°C	-40 °C to + 65°C
Mechanical Construction			
Dimensions (W x H x D)	145 x 32 x 105 mm	145 x 32 x 105 mm	145 x 32 x 105 mm
Weight	510 g	520 g	477 g
Protection Class	IP 30	IP 30	IP 30
Mounting	DIN Rail & Wall Mounting	DIN Rail and Wall mounting	DIN Rail and Wall mounting
Approvals			
Safety of Industrial Control Equipment	EN 62311, EN 62368-1	EN 62311:2008, UL/EN/AS/NZS 62368-1:2014 (formerly EN 60950-1)	EN 60950-1
Radio	ETSI EN 301 511, ETSI EN 301 908-1, ETSI EN 301 908-2, ETSI EN 301 908-13	ETSI EN 300 328, Draft ETSI EN 301 489-1, Draft ETSI EN 301 489-17, Draft ETSI EN 301 489-19. Draft ETSI EN 301 489-52, ETSI EN 301 511, ETSI EN 301 893, ETSI EN 301 908-1, ETSI EN 301 908-2, ETSI EN 301 908-13, ETSI EN 303 413	PTCRB, AT&T, Verizon, FCC CFR-47:2017 Part 15 Subpart B Class A, FCC CFR-47:2016 Part 22 Subpart H, FCC CFR-47:2016 Part 24 Subpart E
Transportation	E8, EN 45545-1, EN 45545-2 HL3	E8, EN 45545-1, EN 45545-2 HL1/HL2/HL3	EN 45545-1, EN 45545-2 HL1/HL2/HL3

* Available frequency band depends on country code setting

MIPP: The Industrial Termination and Patching Solution

Designed for harsh environments, ideal for installation in industrial networks

Robust Quality

The durable MIPP panels are constructed of lightweight, high strength aluminium, securely protecting copper and optical fiber connections under the harshest industrial conditions. The housing is able to withstand temperatures from -20 °C to +70 °C and is resistant to shocks and vibrations.
The patch panel's industrial quality guarantees a secure termination point for reliable industrial Ethernet connectivity.

Fiber, Copper, Both

MIPP comes as either a Fiber Splice Box, Copper Patch Panel, Mix or MPO Patching Cassette. Where both fiber and copper cables are needed together the design enables simply connecting both to a single panel. MIPP allows flexible network design for network engineers and flexible patching for system installers.

Easy Installation and Maintenance

The smart housing design allows quick and flexible installation of the MIPP on a DIN Rail or a wall. Maintenance is equally easy, since the modules can be individually removed without dismantling the MIPP from the DIN Rail or wall mount. Just take out the modules that need work and save precious time.

The Benefits

Robustness - durable UL certified (UL 1863) solution for linking Hirschmann switches to Belden cabling with a guaranteed lifetime of well over 10 years.

Versatility - suitable in nearly any industrial application where fiber splicing, copper termination or both are required. A single MIPP allows for termination and patching of:

- up to 72 fiber cables: MIPP Fiber Splice Box
- up to 24 copper cables: MIPP Copper Patch Panel

Ease of use - mounted on a DIN Rail or wall, any module can be individually extracted from the housing for maintenance actions.

Future proof - simply swap modules to meet new network demands or add blind modules at initial installation.

Save space and cost - high port density and multiple cable entry points.

MIPP Configurator

Please Choose your Configuration Code in the Designated Boxes

Configurator

catalog.belden.com

	Housing		Module 1				Module 2					Module 3				
M	I	P	P	/	L	D	/	2	S	3	P	/	c	u	e	4	/	1	N	N	N

Housing

Housing

X = No housing
A = 1 x single module
B = 2 x single module
C = 3 x single module
D = 4 x single module
E = 5 x single module
F = 6 x single module
G = 1 x double module fiber
H = 2 x double module fiber
I = 3 x double module fiber
J = 1 x single + 1 x double fiber
K = 1 x single + 2 x double fiber
L = 2 x single + 1 x double fiber
M = 2 x single + 2 x double fiber
N = 3 x single + 1 x double fiber
O = 4 x single + 1 x double fiber

Note: A double module requires two places

Mounting

D = Standard DIN Rail
W = Wall mount plate included
X = No housing

Fiber Splice Box Module

Example Module 1

2	S	3	P

Module

1 = Single module for 12 fibers
2 = Double module for 24 fibers

Adapter

B = ST – ST metal duplex adapters
T = ST – ST duplex adapters
M = SC – SC metal duplex adapters
S = SC – SC duplex adapters
L = LC – LC duplex adapters
E = E-2000 – E-2000 adapters

Application

1 = MM/OM1
2 = MM/OM2
3 = MM/OM3
4 = MM/OM4
5 = 6 x SM/OS2 / 6 x OM1
6 = 6 x SM/OS2 / 6 x OM2
7 = 6 x SM/OS2 / 6 x OM3
8 = 6 x SM/OS2 / 6 x OM4
9 = SM/OS2 UPC
A = SM/OS2 APC

Note: 5-8 for double module only

Accessories

P = Pigtails
B = Brilliance field installable connectors
N = No accessories

Copper Patch Panel Module

Example Module 2

c	u	e	4

Module

c = Single copper module

Keystones/Couplers

c = Unshielded couplers
d = Shielded couplers
u = Unshielded keystones
s = Shielded keystones
r = Unshielded Industrial REVConnect couplers
j = Unshielded Industrial REVConnect jacks
v = Shielded Industrial REVConnect jacks

Category

d = CAT5E
e = CAT6
a = CAT6A

Number of Connections

2 = 2 keystones / couplers
4 = 4 keystones / couplers

Blind Module

Example Module 3

1	N	N	N

Two Options

1 = Single blind module
2 = Double blind module

Accessories for MIPP with Industrial REVConnect

Tool	942-290-001	Universal Cable Crimping Tool
Cores: • Cable Manager • Termination Cap	942-290-002	Core pack 10 pcs.
	942-290-003	Core Pack 20 pcs.
	942-290-004	Core Pack 50 pcs.

For additional Fiber Splice Box and Copper Patch Panel accessories, please contact customer service.

MIPP Pre-Terminated MPO Cassette Configurator

				Housing			Cassette 1					Cassette 2					Cassette 3					Cassette 4					Cassette 5					Cassette 6						
M	I	P	P	/	A	D	/	P	4	M	A	/	X	X	X	X	/	X	X	X	X	/	X	X	X	X	/	X	X	X	X	/	X	X	X	X	X	X

Housing

Housing

X = No housing
A = 1 x single module
B = 2 x single module
C = 3 x single module
D = 4 x single module
E = 5 x single module
F = 6 x single module

Mounting

D = Standard DIN Rail
W = Wall mount plate included
X = No housing

Fiber MPO Cassette

MPO Cassette

P = Pre-Terminated MPO Cassette

Fiber Type (Applications)

4 = LC duplex MM/OM4
9 = LC duplex SM/OS2 UPC

Connector (Trunk Side)

M = 1-port MPO-12 (m)

Polarity

A = Type A

Example Part Numbers

Configuration	Description in DIN Rail Design
MIPP/AD/P9MA	MIPP with Pre-Terminated MPO Cassette with 6 LC OS2/UPC duplex adapters (blue) to 1 MPO-12 (male), Polarity Type-A
MIPP/AD/P4MA	MIPP with Pre-Terminated MPO Cassette with 6 LC OM4 duplex adapters (aqua) to 1 MPO-12 (male), Polarity Type-A

Can be inserted in any slot of a MIPP housing

For additional housings and cassette combinations, please contact customer service.

OZD Fiber Interface Repeaters for standardized fieldbus protocols

New generation interface converter for Field Bus networks

Fieldbuses transmit relatively small amounts of data over large distances quickly and reliably. However, as a result of various legacy systems, there is a wide diversity of protocols and standards in use all over the world. The electrical/optical Interface converters are ideal for PROFIBUS field bus networks, Genius fieldbus networks, Modbus Plus fieldbus networks, and RS 485 fieldbus networks.

All the repeaters have seamless integration with process control systems using signal strength outputs combined with fault signaling with built-in relay for an independent alarm line.

To ensure high availability for all networks there are variants for singlemode, multimode and plastic fiber.The OZD Profi 12M G22 fiber optic repeater is designed for high availability PROFIBUS networks.

It extends two electrical PROFIBUS network segments using fiber optic cables and provides seamless redundancy against fiber breaks. The OZD Genius G12 and OZD Modbus Plus G12 fiber optic repeaters deliver flexible, reliable and high-performing connectivity in environments where network uptime is mission critical. Able to connect to any fiber optic cable, these fiber optic repeaters can extend the reach of network segments up to 22,000 m.

As automation increases across manufacturing and industrial operations, the ability to support high volume data traffic becomes increasingly important. The OZD Genius G12 and the OZD Modbus Plus devices can easily manage all data transmission rates specified for the respective fieldbus protocols up to 1 Mbit/s, ensuring a seamless flow of information from all points on the network.

The Benefits

Guaranteed reliability – in case of a transmission fault, integrated ring redundancy automatically switches the signal over to another ring segment without interruption.

Long distances – Ideal for use in real-time control networks that extend across long distances

Easy monitoring – with signal strength outputs, LEDs for link status and data transfer activity

Failsafe communications – with built-in ring redundancy

Robust metal housing – increased EMC-resilience, plus conformal coating, ensure data integrity even in harsh environments.

Markets

- Metal Processing
- Paper & Pulp
- General Manufacturing
- Material Handling

Be certain.
Belden.

Hardened Fiber Modems/Repeaters

RS485 Repeaters		
Part No.	**Order No.**	**Description**
OZD 485 G12 BASIC	943 893-321	1 electrical and 2 optical ports, multimode-line capable
OZD 485 G12 PRO	943 894-321	1 electrical and 2 optical ports, predictive maintenance, multimode, redundant ring capable
OZD 485 G12-1300 PRO	943 895-321	1 electrical and 2 optical ports, predictive maintenance, singlemode, redundant ring capable

PROFIBUS Repeaters		
Part No.	**Order No.**	**Description**
OZD PROFI 12M P11	942 148-007	For plastic fiber, 1 electrical, 1 optical port
OZD PROFI 12M P12	942 148-008	For plastic fiber, 1 electrical, 2 optical ports, redundant ring capable
OZD PROFI 12M G11	942 148-001	1 electrical, 1 optical port, multimode
OZD PROFI 12M G12	942 148-002	1 electrical, 2 optical ports, multimode, redundant ring capable
OZD PROFI 12M G12 EEC	942 148-102	1 electrical, 2 optical ports, multimode, redundant ring capable, EEC*
OZD PROFI 12M G11 1300	942 148-004	1 electrical, 1 optical port, singlemode
OZD PROFI 12M G12 1300	942 148-005	1 electrical, 2 optical ports, singlemode, redundant ring capable
OZD PROFI 12M G12 1300 EEC	942 148-105	1 electrical, 2 optical ports, singlemode, redundant ring capable, EEC*
OZD PROFI 12M P11 PRO	943 904-221	1 electrical, 1 optical port, predictive maintenance, POF
OZD PROFI 12M P12 PRO	943 904-321	1 electrical, 2 optical ports, predictive maintenance, POF, redundant ring capable
OZD PROFI 12M G11 PRO	943 905-221	1 electrical, 1 optical port, predictive maintenance, multimode
OZD Profi 12M P22	942 148-009	2 electrical, 2 optical ports, for plastic fiber, redundant ring capable
OZD Profi 12M G22	942 148-004	2 electrical, 2 optical ports, multimode, redundant ring capable
OZD Profi 12M G22 EEC	942 148-103	2 electrical, 2 optical ports, multimode, redundant ring capable, EEC*
OZD Profi 12M G22-1300	942 148-006	2 electrical, 2 optical ports, singlemode, redundant ring capable
OZD Profi 12M G22-1300 EEC	942 148-106	2 electrical, 2 optical ports, singlemode, redundant ring capable, EEC*

NOTE: *Devices showing EEC above come with conformal coating and can operate in extended environmental conditions: -20 °C to +60 °C,

Hardened Fiber Modems/Repeaters

PROFIBUS Repeaters (continued)RS485 Repeaters		
Part No.	**Order No.**	**Description**
OZD PROFI 12M G12 PRO	943 905-321	1 electrical, 2 optical ports, predictive maintenance, multimode, redundant ring capable
OZD PROFI 12M G12 EEC PRO	943 907-321	1 electrical, 2 optical ports, predictive maintenance, multimode, redundant ring capable, EEC*
OZD PROFI 12M G11-1300 PRO	943 906-221	1 electrical, 1 optical port, predictive maintenance, singlemode
OZD PROFI 12M G12-1300 PRO	943 906-321	1 electrical, 2 optical ports, predictive maintenance, singlemode, redundant ring capable
OZD PROFI 12M G12-1300 EEC PRO	943 908-321	1 electrical, 2 optical ports, predictive maintenance, singlemode, redundant ring capable, EEC*

NOTE: *Devices showing EEC above come with conformal coating and can operate in extended environmental conditions: -20 °C to +60 °C

Geniusbus Repeaters		
Part No.	**Order No.**	**Description**
OZD GENIUS G12	942 148-012	1 electrical, 2 optical ports, redundant ring capable
OZD GENIUS G12 1300	942 148-013	1 electrical, 2 optical ports, singlemode, redundant ring capable

Modbus+ Repeaters		
Part No.	**Order No.**	**Description**
MODBUS PLUS G12	942148010	1 electrical, 2 optical ports, redundant ring capable
MODBUS PLUS G12 1300	942148011	1 electrical, 2 optical ports, singlemode, redundant ring capable

Industrial HiVision Network Management Software

Improve productivity, security and network uptime of industrial Ethernet networks

Industrial HiVision safely and automatically identifies network devices and helps you to configure and monitor them. It is used wherever networks have high availability, power and security requirements. Plus, you can supervise any SNMP-enabled products. The software requires no special IT knowledge and its wizard guides you systematically through the network management set-up process.

Unlike other network management applications, Industrial HiVision has been developed from the beginning to configure and supervise industrial networks. Rich graphics simplify supervision and fault finding. Communication is possible using EtherNet/IP, PROFINET, or OPC DA/UA. Polling rates are configurable to avoid overloading sensitive industrial equipment.

The Annual Maintenance Plan will give you access to all software updates during one year, for a single low cost payment.

The Benefits

Actionable – obtain instant visibility of key performance indicators with the Network Dashboard, allowing timely remediation that improves uptime and security

Time saving – easily identify, map and configure all network infrastructure with MultiConfig, including SNMP-enabled devices from any manufacturer, even during live operation

Performance assured – download a free version of the software for your unlimited use to experience the benefits before you buy

Markets

- Automotive
- Machine Building
- Mining
- Oil & Gas
- Transportation
- Power Transmission & Distribution

Standard Variants

Part Number	Type	Product Description
943 156-032	Industrial HiVision, 32 Nodes	Network management software for monitoring of industrial networks. 32 nodes license
943 156-064	Industrial HiVision, 64 Nodes	Network management software for monitoring of industrial networks. 64 nodes license
943 156-128	Industrial HiVision, 128 Nodes	Network management software for monitoring of industrial networks. 128 nodes license
943 156-256	Industrial HiVision, 256 Nodes	Network management software for monitoring of industrial networks. 256 nodes license
943 156-512	Industrial HiVision, 512 Nodes	Network management software for monitoring of industrial networks. 512 nodes license
943 156-124	Industrial HiVision, 1024 Nodes	Network management software for monitoring of industrial networks. 1024 nodes license
943 156-248	Industrial HiVision, 2048 Nodes	Network management software for monitoring of industrial networks. 2048 nodes license
943 156-496	Industrial HiVision, 4096 Nodes	Network management software for monitoring of industrial networks. 4096 nodes license
942 021-032	Industrial HiVision Annual Maintenance Plan, 32Nodes	Annual Maintenance Plan (AMP) for Industrial HiVision for 32 nodes
942 021-064	Industrial HiVision Annual Maintenance Plan, 64Nodes	Annual Maintenance Plan (AMP) for Industrial HiVision for 64 nodes
942 021-128	Industrial HiVision Annual Maintenance Plan, 128Nodes	Annual Maintenance Plan (AMP) for Industrial HiVision for 128 nodes
942 021-256	Industrial HiVision Annual Maintenance Plan, 256Nodes	Annual Maintenance Plan (AMP) for Industrial HiVision for 256 nodes
942 021-512	Industrial HiVision Annual Maintenance Plan, 512Nodes	Annual Maintenance Plan (AMP) for Industrial HiVision for 512 nodes
942 021-124	Industrial HiVision Annual Maintenance Plan, 1024Nodes	Annual Maintenance Plan (AMP) for Industrial HiVision for 1024 nodes
942 021-248	Industrial HiVision Annual Maintenance Plan, 2048Nodes	Annual Maintenance Plan (AMP) for Industrial HiVision for 2048 nodes

Technical Information

Product Description	
Type	**Industrial HiVision**
Description	Network management software for monitoring of industrial networks
License	License based on the number of supported nodes (IP addresses). Annual Maintenance Plan available. Licenses are cumulative.
Supervision	
Topology recognition	Topology recognition is based on LLDP (Link Layer Discovery Protocol, IEEE802.1AB) and Learned Address Tables. Switches, routers, WLAN devices, unmanaged switches/hubs, and end devices are supported. Can also map networks behind a router. Path Availability Calculation.
Monitoring	Graphical status representation for devices, links, power supplies, fans, and any other device sub-component. Status displays for third-party products. All statuses are configurable. Supports multiple topology windows and a network hierarchy view. VLAN viewer. User configurable event log. Customizable event actions. Reporting tool. Project setup wizard. Hierarchical supervision structure. Task scheduler. Network Dashboard. Configuration Signature Check. Configuration File Compare. Remote diagnostics via HiMobile App (available for iOS, Android or Windows Phone operating systems).
Supported devices	All Hirschmann devices, any third-party SNMP capable device, any ICMP (Ping) capable device
Event generation	Polling and SNMPv1 trap.
Alarm and event actions	Alarm and event logging. Alarm actions such as message window, email, SMS, push notification, and start executable. Event forwarding to Syslog server. Audible alarm.
SCAD / Process visualization	
OPC Servers	Map device and connection states as well as device properties. Can be used inside SCADA systems via the OPC Data Access 2.0/3.0 or OPC UA interface.
Protocols	
Supported protocols	HiDiscovery v1, ICMP (Ping), SNMPv1, SNMPv3, OPC DA, OPC UA
Configuration	
Configuration functions	Individual device configuration. Configuration of multiple devices simultaneously. Configuration of identical parameters across multiple device types simultaneously. Firmware update of multiple devices. Scheduled device configuration backup. HiFusion for integration of third-party devices.
Security	
Application Security	User management with multiple roles. Authentication via Active Directory or RADIUS. Audit Trail.
Network Security	Network infrastructure security status overview. Device security status warning. Password change for multiple devices simultaneously. Network security lockdown. Rogue device detection. IP/MAC address pair tracking.
Documentation	
Documentation	Device documentation, export of maps and lists, asset management.
Language Support	
Menus and dialogs	Chinese, English, French, German, Greek, Indonesian, Italian, Japanese, Korean, Portuguese, Russian, Spanish.
Manual and help texts	Chinese, English, French, German, Italian, Spanish.

NOTE: Did not find a suitable product?
Please visit our website for more configurations and the complete technical specifications: Industrial HiVision Network Management Software

System Accessories

A wide range of system accessories that perfectly support industrial Ethernet solutions

Hirschmann offers a flexible line of hot-pluggable fiber optic and copper SFP and XFP transceivers for your Ethernet products. Transceivers are available for Fast Ethernet, Gigabit Ethernet, 2.5 and 10 Gigabit Ethernet, and Bi-Directional Gigabit Ethernet interfaces and are suitable for wide operating temperatures.

Hirschmann's Auto-configuration Adapters (ACA) for programming and configuration backup support a temperature range from -40 °C up to +70 °C. The functionality is guaranteed under the same environmental conditions (shock, vibration, EMC) as defined for the supported switches and firewalls.

The Hirschmann power supply units are available with AC power input ranges extending from 100-240 V AC and 100-375 V DC. Units are also available that convert to either 24 V DC or -48 V DC. For applications where water might be present, you can choose between two IP67 models and convenient DIN Rail mounting completes the power supply program.

For new or retrofit applications in need of maximum power without device limitations, the Hirschmann Power over Ethernet (PoE) injectors provide both a high port count and up to 240 W of power without load sharing. Depending on your application's needs, two types of PoE injectors are available – active (with integrated power supply) and passive (with low voltage power supply input).

Belden's Modular Industrial Patch Panel (MIPP) is a robust and versatile termination panel for both fiber and copper cables that need to be connected from operating environment to active equipment. Easily installed on any standard 35 mm DIN Rail, MIPP features high port density to meet expanding network connectivity needs within limited space.

The Benefits

Increased flexibility – a wide range of SFP and XFP transceivers that perfectly support Hirschmann's industrial Ethernet solutions for reliable performance

Simple plug-and-play – after connecting the ACA, the new switch loads and saves the complete configuration and software

Reliable power source – for sensitive loads in many industrial automation environments where equipment is exposed to harsh conditions

High-efficiency – PoE injectors can satisfy the growing demand of energy-hungry devices

Future-proof – as network design may change over time, MIPP allows for modifications by simply swapping modules to meet the new design required

Markets

- Physical Security
- Transportation
- Process Automation
- Production Automation
- Automotive Manufacturing
- Machine Building
- Renewable Energy
- Water and Wastewater

SFP+XFP Transceiver Modulers

Fast Ethernet Transceivers		
942194-001	SFP-FAST-MM/LC	Entry level SFP multimode Transceiver, ≈5km (4km) with G50/125µm-fiber (G62,5/125µm-fiber), LC socket
942 194-002	SFP-FAST-MM/LC-EEC	Entry level SFP multimode Transceiver, ≈5km (4km) with G50/125µm-fiber (G62,5/125µm-fiber), LC socket. EEC (-40 to +70°C)
942 195-001	SFP-FAST-SM/LC	Entry level SFP singlemode Transceiver, 0 - 25km with 9u singlemode fiber, LC socket
942 195-002	SFP-FAST-SM/LC-EEC	SFP singlemode Transceiver, 0 - 25km with 9u singlemode fiber, LC socket. EEC (-40 to +70°C)
943 865-001	M-FAST SFP-MM/LC	SFP multimode Transceiver, ≈5km (4km) with G50/125µm-fiber (G62,5/125µm-fiber), LC socket
943 945-001	M-FAST SFP-MM/LC EEC	SFP multimode Transceiver, ≈5km (4km) with G50/125µm-fiber (G62,5/125µm-fiber), LC socket. EEC (-40 to +70°C)
943 866-001	M-FAST SFP-SM/LC	SFP singlemode Transceiver, 0 - 25km with 9u singlemode fiber, LC socket
943 946-001	M-FAST SFP-SM/LC EEC	SFP singlemode Transceiver, 0 - 25km with 9u singlemode fiber, LC socket. EEC (-40 to +70°C)
943 867-001	M-FAST SFP-SM+/LC	SFP singlemode+ Transceiver, 25 - 65km with 9u singlemode fiber, LC socket
943 947-001	M-FAST SFP-SM+/LC EEC	SFP singlemode+ Transceiver, 25 - 65km with 9u singlemode fiber, LC socket. EEC (-40 to +70°C)
943 868-001	M-FAST SFP-LH/LC	SFP singlemode longhaul+ Transceiver, 47 - 104km with 9u singlemode fiber, LC socket
943 948-001	M-FAST SFP-LH/LC EEC	SFP singlemode longhaul+ Transceiver, 47 - 104km with 9u singlemode fiber, LC socket. EEC (-40 to +70°C)
942 098-001	M-FAST SFP-TX/RJ45	SFP Transceiver, Fast Ethernet, RJ45
942 098-002	M-FAST SFP-TX/RJ45 EEC	SFP Transceiver, Fast Ethernet, RJ45, -40 °C to +85 °C

Gigabit Ethernet Transceivers		
942 196-001	SFP-GIG-LX/LC	Entry level 0 - 20km with E9/125 µm-fiber singlemode with LC socket (1 x 1000BASE-LX Port)
942 196-002	SFP-GIG-LX/LC-EEC	Entry level 0 - 20km with E9/125 µm-fiber singlemode with LC socket (1 x 1000BASE-LX Port). EEC (-40 to +70°C)
943 014-001	M-SFP-SX/LC	1000Base-SX,550m 50/125 µm MM, 275m 62.5/125 µm MM
943 896-001	M-SFP-SX/LC EEC	1000Base-SX,550m 50/125 µm MM, 275m 62.5/125 µm MM, EEC -40 to +70°C
943 015-001	M-SFP-LX/LC	1000Base-SX,550m 50/125 µm MM,550m 62.5/125 µm MM, 20km 9/125 µm SM
943 897-001	M-SFP-LX/LC EEC	1000Base-SX,550m 50/125 µm MM,550m 62.5/125 µm MM, 20km 9/125 µm SM, EEC -40 to +70°C
942 023-001	M-SFP-LX+/LC	5-42 km, 5-20 dB link budget at 1310 nm, A = 0.4 dB/km, 3 dB reserve,1000BASE-LX with LC connector, 0°C to +60°C
942 024-001	M-SFP-LX+/LC EEC	5-42 km, 5-20 dB link budget at 1310 nm, A = 0.4 dB/km, 3 dB reserve,1000BASE-LX with LC connector, -40°C to +85°C
943 042-001	M-SFP-LH/LC	16 - 80km with E9/125 µm-fiber singlemode with LC socket (1 x 1000BASE-LX Port)
943 898-001	M-SFP-LH/LC EEC	16 - 80km with E9/125 µm-fiber singlemode with LC socket (1 x 1000BASE-LX Port). EEC (-40 to +70°C)
943 049-001	M-SFP-LH+/LC	44 - 120km with E9/125 µm-fiber singlemode (longhaul) with LC socket (1 x 1000BASE-LX Port)
943 977-001	M-SFP-TX/RJ45	SFP TX Gigabit Ethernet Transceiver for Gigabit Ethernet slots, 1000 Mbit/s full duplex auto neg. fixed, cable crossing not supported. RJ45 connector
942 161-001	M-SFP-TX/RJ45 EEC	SFP TX Gigabit Ethernet Transceiver for Gigabit Ethernet slots, 1000 Mbit/s full duplex auto neg. only including auto-crossing extended temperature range
942 108-001	M-SFP-MX/LC EEC	1.5 km 50/125, 500 m with 62.5/125 µm fiber, LC socket, -40 °C to +85 °C

NOTE: Did not find a suitable product?
Please visit our website for more configurations and the complete technical specifications: System Accessories

Gigabit Ethernet Bi-Directional Transceivers(Single Fiber Strand)		
943 974-001	M-SFP-BIDI Type A LX/LC EEC	SFP Fiberoptic bi-directional Gigabit Ethernet Transceiver SM, single strand, type A;1 x 1000BASE-LX with LC connector, extended temperature range (-40 to +85°C); 0 - 20km
943 974-002	M-SFP-BIDI Type B LX/LC EEC	SFP Fiberoptic bi-directional Gigabit Ethernet Transceiver SM, single strand, type B;1 x 1000BASE-LX with LC connector, extended temperature range (-40 to +85°C); 0 - 20km
943 975-001	M-SFP-BIDI Type A LH/LC EEC	SFP Fiberoptic bi-directional Gigabit Ethernet Transceiver LH, single strand, type A;1 x 1000BASE-LX with LC connector, extended temperature range (-40 to +85°C); 23 - 80km
943 975-002	M-SFP-BIDI Type B LH/LC EEC	SFP Fiberoptic bi-directional Gigabit Ethernet Transceiver LH, single strand, type B;1 x 1000BASE-LX with LC connector, extended temperature range (-40 to +85°C); 23 - 80km
943 974-101	M-SFP-BIDI-Bundle LX/LC EEC	SFP Fiberoptic bi-directional Gigabit Ethernet Transceiver SM, single strand, bundle = 1 x type A and 1 x type B
943 975-101	M-SFP-BIDI-Bundle LH/LC EEC	SFP Fiberoptic bi-directional Gigabit Ethernet Transceiver LH, single strand, bundle = 1 x type A and 1 x type B

2.5 Gigabit Ethernet Transceivers		
942 162-001	M-SFP-2.5-MM/LC EEC	Multimode Fiber (MM) 50/125 µm - 0 to 550 m, 850 nm; 4 dB link budget; OM3 fi ber (3.5 dB/km, 2000 MHz*km) Multimode Fiber (MM) 50/125 µm - 0 to 400 m, 850 nm; 4 dB link budget; OM2 fi ber (3.5 dB/km, 500 MHz*km) Multimode Fiber (MM) 62.5/125 µm - 0 to 170 m, 850 nm; 4 dB link budget; OM1 fi ber (3.5 dB/km, 200 MHz*km), -40 to +70°C
942 163-001	M-SFP-2.5-SM-/LC EEC	Singlemode Fiber (SM) 9/125 µm - 0 to 5 km, 1310 nm; 8.5 dB link budget; 0.55 dB/km; (GR-253 CORE), -40 to +70°C
942 164-001	M-SFP-2.5-SM/LC EEC	Singlemode Fiber (SM) 9/125 µm - 0 to 20 km, 1310 nm; 13 dB link budget; 0.55 dB/km; (GR-253 CORE), -40 to +70°C
942 165-001	M-SFP-2.5-SM+/LC EEC	Singlemode Fiber (SM) 9/125 µm 21 to 45 km, 1310 nm; 12 to 25 dB link budget; 0.55 dB/km; (GR-253 CORE), -40 to +70°C

10 Gigabit Ethernet Transceivers		
942 326-001	SFP-10-SR/LC EEC	Entry level 10Gigabit SFP+ Multimode (MM) 850nm
942 326-002	SFP-10-LR/LC EEC	Entry level 10Gigabit SFP+ Singlemode (SM) 1310nm
942 210-001	M-SFP-10-SR/LC EEC	10Gigabit SFP+ Multimode (MM) 850nm
942 211-001	M-SFP-10-LR/LC EEC	10Gigabit SFP+ Singlemode (SM) 1310nm
942 212-001	M-SFP-10-ER/LC EEC	10Gigabit SFP+ Singlemode (SM) 1550nm-40km
942 213-001	M-SFP-10-ZR/LC	10Gigabit SFP+ Singlemode (SM) 1550nm-80km

10 Gigabit Ethernet Transceivers		
943 917-001	M-XFP SR/LC	XFP multimode fiber optic 10Gigabit-ETHERNET transceiver 300m (50/125 µm) or *33m (62,5/125µm)
943 919-001	M-XFP-LR/LC	XFP singlemode fiber optic 10Gigabit-ETHERNET transceiver (2m - 10km)
943 920-001	M-XFP ER/LC	XFP singlemode fiber optic 10Gigabit-ETHERNET transceiver (10km ~40km)
943 921-001	M-XFP ZR/LC	XFPsinglemode fiber optic 10Gigabit-ETHERNET transceiver (40km ~80km)
942 054-001	M-XFP SR/LC EEC	XFP multimode fiber optic 10Gigabit-ETHERNET transceiver 300m (50/125 µm) or *33m (62,5/125µm),-40 to +70°C
942 055-001	M-XFP LR/LC EEC	XFP singlemode fiber optic 10Gigabit-ETHERNET transceiver (2m - 10km),-40 to +70°C
942 056-001	M-XFP ER/LC EEC	XFP singlemode fiber optic 10Gigabit-ETHERNET transceiver (10km ~40km),-40 to +70°C

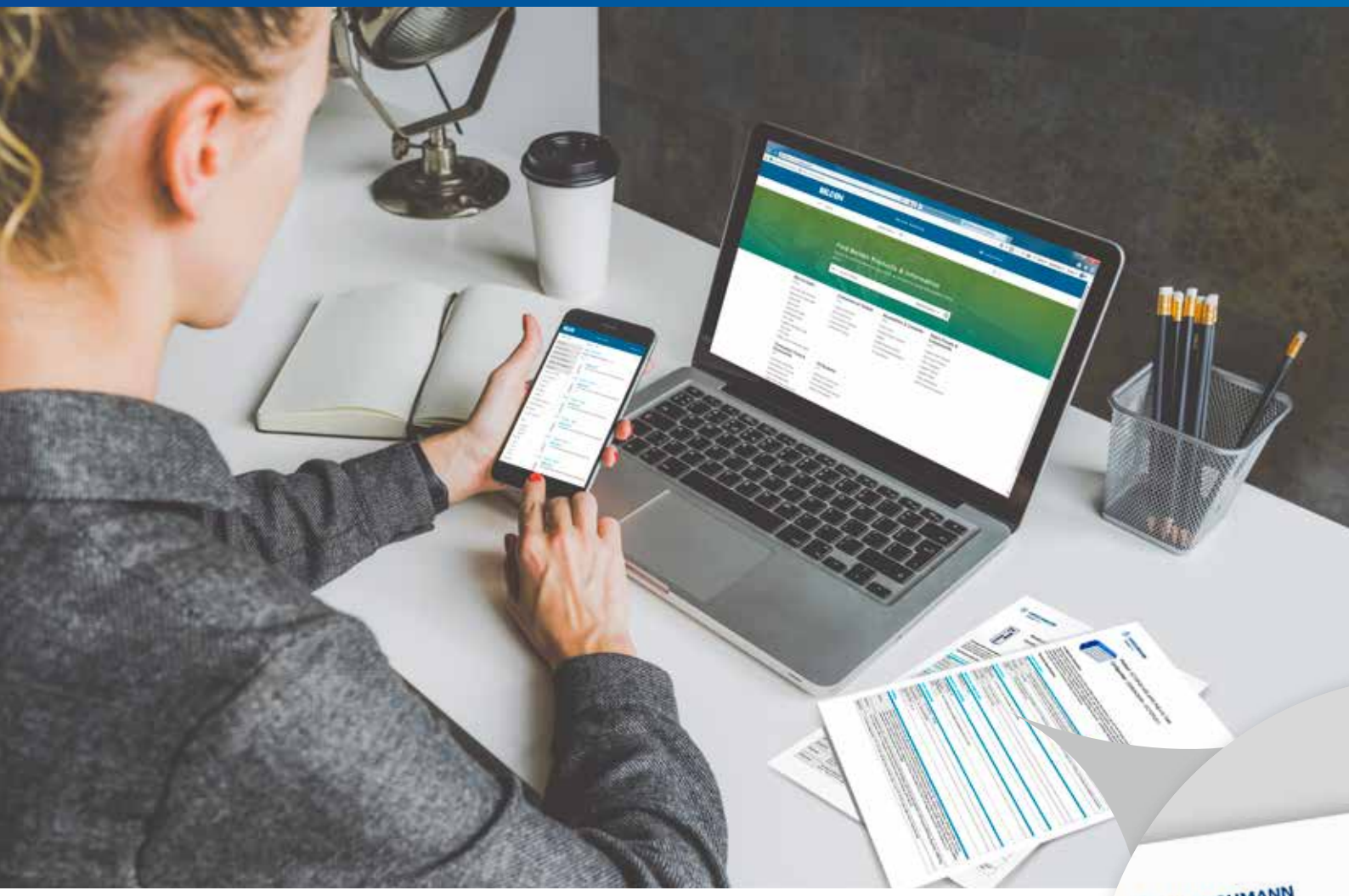
NOTE: Did not find a suitable product?
Please visit our website for more configurations and the complete technical specifications: System Accessories

Accessories

ACA - Programming and Configuration Backup		
943751002	ACA11-RJ11 EEC	Stores the configuration data of the connected managed switches (RJ11 connector). EEC (-40 to +70°C)
943972001	ACA11-M12 EEC	Stores the configuration data of the connected managed switches (M12 connector). USB interface. EEC (-40 to +70°C). IP67
943973001	ACA11-miniDIN (EEC)	Stores the configuration data of the connected managed switches (M12 connector). RS232 interface. EEC (-40 to +70°C). IP67
943271003	ACA21-USB EEC	Stores the configuration data of the connected managed (USB Interface). EEC (-40 to +70°C)
942074001	ACA31	Adapter for storage/backup and device replacement of switches and firewalls (RSP, MSP, EAGLE30)
942125001	ACA22-M12 EEC	Auto-configuration adapter 512 MB, with M12 (USB 2.0) connection and extended temperature range (-40 to +70°C)
942124001	ACA22-USB EEC	Auto-configuration adapter 512 MB, with USB 2.0 connection and extended temperature range (-40 to +70°C)
942152001	ACA22A-USB Mini	Auto-configuration adapter 512 MB, with USB 2.0 connection and extended temperature range (-40 to +70°C)

Wireless Antenna		
943 981-016	BAT-ANT-N-MiMoDB-6N-IP65	2.4G/5.8G WiFi Omni Antenna, 6dBi, VSWR≤1.5, φ145×180mm
943 981-017	BAT-ANT-N-MiMoDB-11N-IP65	2.4G/5.8G WiFi Directional Antenna, 10/11dBi, VSWR≤1.8, 261x261mm, Bracket:JM-TA1
943 981-117	BAT-ANT-N-MiMoDB-11N-IP65-R	2.4G/5.8G WiFi Directional Antenna, 10/11dBi, VSWR≤1.8, 261x261mm, reinforced Bracket: JM-TD2A
943 981-018	BAT-ANT-SMA-MiMoDB-4N-IP65	2.4G/5.8G WiFi Omni Antenna, 3/4dBi, VSWR≤2.0, φ90×40mm, RP-SMA female with cable length 1 meter
943 981-012	BAT-ANT-N-MiMoDB-5N-IP65	Dual Band Omni-Directional, 2.4GHz 3.5dBi, 5 GHz 5.5dBi, MiMo
942 324-001	BAT-Splitter-N f-f	1/2 splitter, 2400~6000MHz, loss ≤3.5dB, N female
942 325-501	BAT-CLB-RJ142-5 N m-f	5m cable RG142 with N male and N female connectors, 0~6GHz
942 324-502	BAT-CLB-RJ142-5 N f-f	5m cable RG142 with both N female connectors, 0~6GHz
942 325-503	BAT-CLB-RJ142-5 N m-m	5m cable RG142 with both N male connectors, 0~6GHz
943 903-515	BAT-CLB-15 N m-f	15m cable with Nmale to N female connectors

NOTE: Did not find a suitable product?
Please visit our website for more configurations and the complete technical specifications: System Accessories



Find the Perfect Product for Your Needs at catalog.belden.com

Discover our expanding online catalog, streamlined to provide users easy access to the most relevant and useful product information, even on mobile devices.

Whether you are searching for a particular product by part number or exploring our extensive portfolio by browsing through product categories, you will find the information you need. The filter and configuration functionalities give you the ability to narrow down your search by features so that you can easily find the product you need. The online catalog continues to be updated with new products and new information. However, if you can't find something please contact your Belden representative. They will be able to help you find it or connect you with the Competence Center to support your requirements for design, implementation or maintenance of a complete network solution.

Search for part number, download technical data sheets, manuals, software or device description files, compare products or request a quote

Our Technical Support is Ready to Serve You

You can expect our full support from implementation to the optimization of everyday operations regardless of the technology you use.

Welcome to our easy-to-use Helpdesk ticket system supporting Hirschmann Industrial Networking products.

Hirschmann customers can rely on Belden's technical support through a state-of-the-art Helpdesk ticket system. Our portal for technical support allows us to handle your requests fast and efficient.

Use your preferred access for immediate technical help. Your usual customer service representative remains at your disposal to either enter the ticket in your name or possibly answer your question straight away.

Easy to Use and Navigate Support System

HIRSCHMANN Support Portal

https://hirschmann-support.belden.com

Belden CIC Center

In the fast-moving and uncertain times that are today's reality, data and insights are essential for making smart, fast and effective business decisions. The convergence of operational technology (OT) and information technology (IT) will provide the backbone you need to move forward.

But we know getting there isn't easy. Talent shortages are an ongoing challenge. Technology evolves faster now than it ever has. Customers have higher expectations for quality and innovation. Demand and market conditions fluctuate endlessly.

This is where the CIC can help. Our mission is to help you accelerate the design and implementation of robust, reliable and secure industrial networks that deliver the data and insight needed to fuel better business performance.

HIRSCHMANN
A BELDEN BRAND

ACCELERATE YOUR PATH FROM THE SENSOR TO THE CLOUD

BELDEN PILLARS

TECHNICAL CONSULTING

Confidently build the network you need

PROJECT MANAGEMENT

Bring your customized networking solution to life

EDUCATION & EVENTS

Own your future by learning new skills

SERVICE & SUPPORT

Ensure your network availability 24/7

BELDEN Customer Innovation Center™

Headquarters

Global

Belden St. Louis
1 N. Brentwood Blvd. 15th Floor
St. Louis MO 63105 US
Phone:+314-854-8000
Fax:+314-854.8001
info@belden.com

Division Headquarters - Americas
Belden - Richmond
2200 U.S. Highway 27 South
Richmond, IN47374 US
Phone: 765.983.5200
Toll Free: 1-800-BELDEN1
Fax: +765-983-5294
info@belden.com

Division Headquarters - Europe
Belden - EMEA
Edisonstraat 9, Postbus 9
5928 PGVenlo, 5900 AA The
Netherlands
Phone:+31-773-878-555
Fax: +31-773-878-448
venlo.salesinfo@belden.com

Division Headquarters - Asia Pacific
Belden - Hong Kong
7/F Harbour View 2 16 Science Park
East Avenue Hong Kong Science Park,
Shatin Hong Kong
Phone: +852-2955-0128
Fax: +852-2907-6933
hongkong.sales@belden.com

Asia Pacific

ANZ Region

Australia
Level 40, 140 William Street,
Melbourne, Victoria 3000,
Australia
Phone: 1800-500-775
australia.sales@belden.com

China Region

Beijing
Room 2507, 25/F Jintai Building
No.1 Xi Bahe Southern Road
Chaoyang District Beijing
People's Republic of China
Phone: +86-10-6591-8801
Fax: +86-10-6591-8933
china.marketing@belden.com

Shanghai
24/F, Building C, No.900 Yi
Shan Road, Caohejing
High-Tech Park, Shanghai
200233
People's Republic of China
Phone: +86-21-3418-2688
Fax: +86-21-5445-2366/77
china.marketing@belden.com

Shenzhen
Rm 809, 8/F, New World Center
No.6009 Yitian Road
Fu Tian District
Shenzhen 518035
People's Republic of China
Phone: +86-755-2398-0778
Fax: +86-755-2398 0578
china.marketing@belden.com

Suzhou
333 Yanhu Road, Huaqiao Town
Kunshan City, Jiangsu Province Suzhou
215332, Jiangsu Province People's
Republic of China
Phone: +86-512-5796-1688
Fax: +86-512-5796-1222
china.marketing@belden.com

India Region

Bengaluru
Vaswani Presidio, 6th Floor
56 Panathur Rd, New Kaverappa
Layout, Kadubeesanahalli, Panathur
Bengaluru, Karnataka, India 560103
Phone: +91-80-6703-7800
india.sales@belden.com

Gurugram
Unit No :233-236, 2nd Floor, Spazedge,
Tower B, Sohna Road, Sector 47,
Gurugram Haryana 122002
Phone: +91-124-450-9999
Fax: +91-124-450-9900
india.sales@belden.com

Mumbai
Unit 2001 to 2003, 20th Floor, Kailas
Business Park, A Wing,
Veersawarkar Road, Vikhroli (W)
Mumbai 400079
India
Phone: +91-022-400-98200
india.sales@belden.com

Pune
Plot No D-228/1
Chakan MIDC Phase II
Village Bhamboli, TalKhed
District-Pune, Maharashtra
India 410507
Phone: +91-21-3563-8791
Fax: +91-21-3563-8790
india.sales@belden.com

NA Region

Japan
Level 3, Marunouchi Nijubashi Building,
3-2-2 Marunouchi Chiyoda-ku
Tokyo 100-0005 Japan
Phone: +03-6837-9613
japan.sales@belden.com

South Korea
505 KD Tower,
Wangsimni-ro 125,
Seongdong-gu,
Seoul, Republic of Korea
Fax: +02-6964-7192
korea.sales@belden.com

SEA Region

Indonesia
Puri Indah Financial Tower,
Sue 805 Jl. Puri Indah Raya Blok T
No.8, RT.1/RW.2,
Kec. Kembangan, Jakarta Barat,
JAKARTA 11610 - Indonesia
Phone: +62-21-5799-3466
Fax: +62-21-5748-8888
indonesia.sales@belden.com

Malaysia
Suite 03-02, Level 3, Tower A
Vertical Business Suite
Bangsar South City
No. 8 Jalan Kerinchi
Kuala Lumpur 59200
Malaysia
Phone: +603-2247-1898
malaysia.sales@belden.com

Philippines
One Global Place Level 10-1
25th Street & 5th Street
Bonifacio Global City,
Taguig Philippines
Phone: +632-3224-2029
philippines.sales@belden.com

Singapore
151 Lorong Chuan
#05-01 New Tech Park
Singapore 556741
Phone: +65-6879-9800
singapore.sales@belden.com

Thailand
No. 3 Promphan 3 Building
UNIT 1725,17th Floor, Soi Lad Phrao 3
Chomphon Sub-District, Chatuchak
District Bangkok 10900
Thailand
Phone: +66-2026-0525
Fax: +66-2024-6767
thailand.sales@belden.com

Vietnam
S007, Floor 5, CJ Building,
2bis-4-6 Le Thanh Ton street,
Ben Nghe ward, District 1,
Ho Chi Minh City, Vietnam
Phone: +84 28 6255 6800
Fax: +84 28 6255 6802
vietnam.sales@belden.com

AlphaWire BELDEN GarrettCom A BELDEN BRAND

HIRSCHMANN A BELDEN BRAND HIRSCHMANN IT A BELDEN BRAND lumbergautomation A BELDEN BRAND OTN Systems

ProSoft TECHNOLOGY tripwire

BELDEN