



Hirschmann Essentials

Everything you need to build a reliable industrial network.



HIRSCHMANN

A **BELDEN** BRAND

DIN Rail Mount Switches
Rack Mount Switches
M12 Switches
Industrial Security
Industrial Wireless
Software
Industrial Patch Panel
Industrial Fiber Interface
System Accessories

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



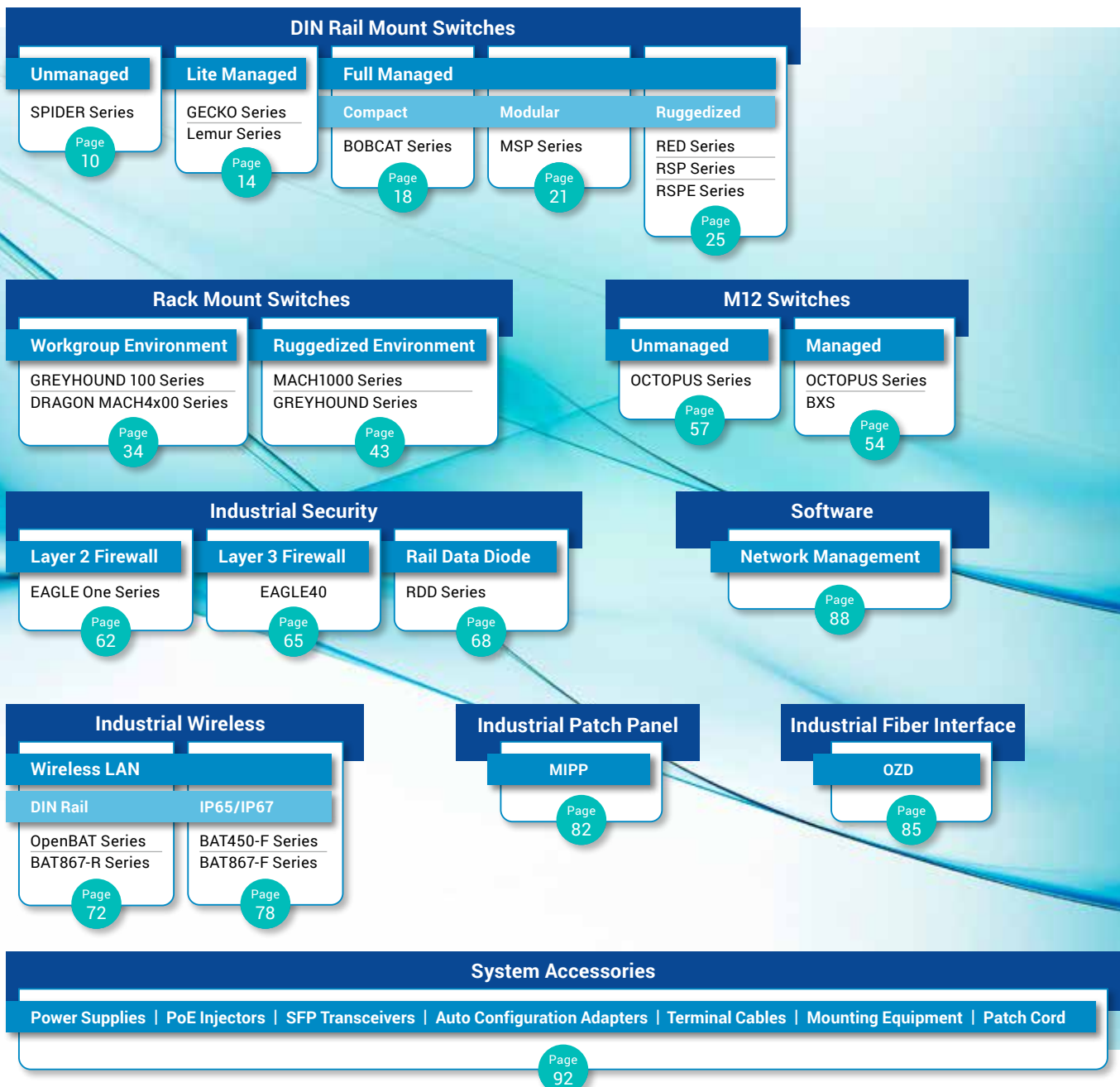


Product Selector

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++ (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																																									
Lemur	●	○	○	G 11	●				●	●	●	●						●	●				●	●	●	●	●	●	●	●										14	
GECKO	●	○	○	100 5	●				●	●														●	●	●			●											17	
Managed Switches																																									
BOBCAT	●		○	25G 12	●				●	●	●	●			●	●							●	●	●	●	●	●	●	●	●	●				●			●		19
MSP	●		○	10G 28	●	●			●	●	●	●				●	●	●					●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	22
RED	●		○	100 4	●	●			●	●	●	●	●		●	●							●	●	●	●	●	●	●	●	●	●									26
RSP	●		○	G 11	●	●			●	●	●	●	●	●		●	●						●	●	●	●	●	●	●	●	●	●		●	●			●	●		29
RSPE	●		○	G 28	●	●			●	●	●	●			●	●	●	●					●	●	●	●	●	●	●	●	●	●	●	●	●		●	●		●	32
BXS		●		G 12	●				●			●					●	●					●	●	●	●	●	●	●						●	●				55	
BXP		●		10G 28	●	●						●							●		●			●	●	●	●	●	●	●	●	●				●	●			58	
OCTOPUS		●		G 28	●	●			●	●	●	●	●	●*	●	●	●	●	●				●	●	●	●	●	●	●	●	●	●	●		●	●		●	●	●	62
GREYHOUND100		○	●	10G 60	●	●			●	●	●	●	●		●	●								●	●	●	●									●				35	
DRAGON MACH4x00		○	●	10G 88	●	●									●	●								●	●	●	●		●											41	
MACH1000		○	●	G 28	●	●			●	●	●	●	●		●	●	●	●				●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		44
GREYHOUND		○	●	25G 28	●	●			●	●	●	●	●	●	●	●	●	●					●	●	●	●	●	●	●	●	●	●	●	●	●		●				49
Firewall Systems																																									
EAGLE One	●		●	100 2	●	●			●	●	●	●		●	●								●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	67
EAGLE40	●		●	100 2	●				●	●	●	●											●	●	●	●	●	●									●	●		70	
Rail Data Diode	●		●	100 7	●	●			●			●			●	●							●	●	●	●	●	●							●	●				73	
Wireless LAN																																									
OpenBAT	●	○	○	450 2	●	●			●	●	●	●	●	●	●	●			●				●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	75
BAT867-R	●		○	867 1	●	●			●															●	●	●	●											●		78	
BAT450-F		●		450 2	●	●			●			●	●*						●				●	●	●	●	●	●			●							●		84	
BAT867-F		●		867 1	●	●			●			●								●			●	●	●	●	●	●								●				81	

○ 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	Classic Firewall Software	HiSecOS – Hirschmann Security Operating System	HiLCOS – Hirschmann WLAN Software	HiEOS – Hirschmann Entry Operating System
Lite Managed Switch							
LEMUR							●
GECKO	●						
Managed Switches							
BOBCAT			●				
MSP			●				
RED			●				
RSP			●				
RSPE			●				
OCTOPUS		●	●				
BXS			●				
BXP			●				
GREYHOUND100			●				
DRAGON MACH4000			●				
MACH1000		●					
GREYHOUND			●				
Firewall Systems							
EAGLE One				●			
EAGLE 40					●		
Rail Data Diode			●				
Wireless LAN							
OpenBAT						●	
BAT867-R						●	
BAT450-F						●	
BAT867-F						●	



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

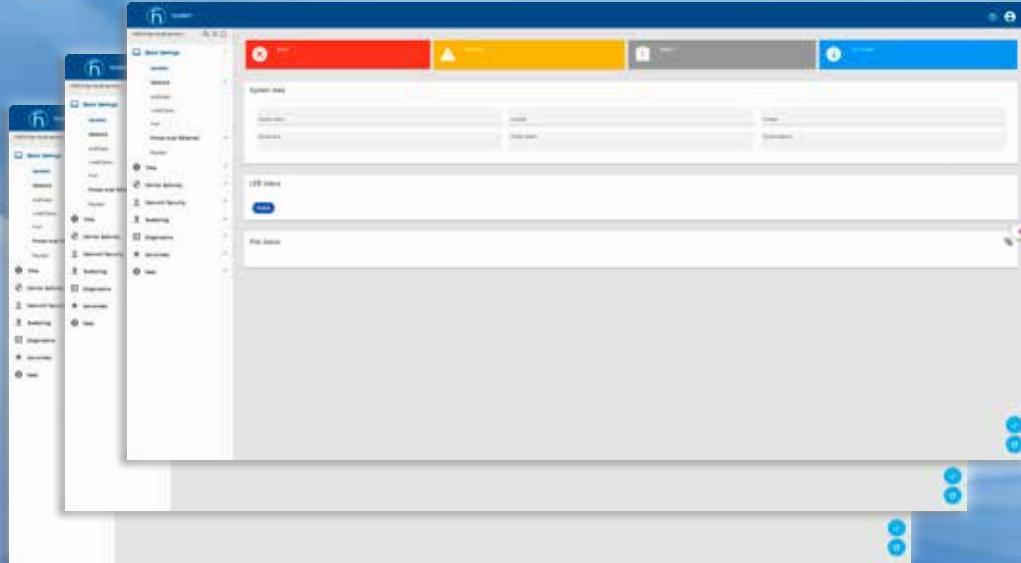
Redundancy – an extensive number of standardized and proprietary redundancy mechanisms to meet any requirement

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



Hirschmann Entry Operating System (HiEOS)

Simplified managed switch configuration and management

The HiEOS software features essential, easy-to-use Layer 2 switching capabilities. The intuitive web interface enables users to configure and monitor switches with no special IT know-how required.

As automation expands and industrial networks grow in complexity, easy-to-use network management technology that supports streamlined configuration and remote diagnostics is vital.

The advanced HiEOS software runs on LEMUR lite managed switches, which are optimal for use in many industrial environments. With the HiEOS intuitive graphical user interface, switch setup and maintenance are easy – with no special IT intervention or knowledge required. Also, HiEOS provides a rich feature set, including PoE/PoE+ support and device management.

HiEOS software runs on the LEMUR lite managed switches family – ideal for industrial applications that require compact, secure and ruggedized equipment. Delivering exceptional performance, HiEOS provides the most up-to-date security and essential redundancy mechanisms to deliver high reliability for industrial environments.

The Benefits

- The most essential features, plus high reliability, delivers “set it and forget it” capability.
- Enhanced security with the most up-to-date software architecture.
- Extremely easy configuration via an intuitive graphical user interface.

Markets

- Machine building
- Food and Beverage
- Automotive
- Airports





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



Technical Information - SPIDER III Standard und Premium Line Switches

Product Description		
Type	SPIDER III Standard Line Switches	SPIDER III Premium Line Switches
Description	Unmanaged, Industrial Ethernet Rail Switch, fanless design, store and forward switching mode, electrical and optical Fast-Ethernet (10/100 Mbit/s) and Gigabit-Ethernet (10/100/1000 Mbit/s), IP30 plastic housing/metal housing	Unmanaged, configurable Industrial Ethernet Rail Switch, fan less design, store and forward switching mode, electrical and optical Fast-Ethernet (10/100 Mbit/s) and Gigabit-Ethernet(10/100/1000 Mbit/s), USB port for configuration, IP40 metal housing
Port Type and Quantity	Up to 10 FE or GE ports, thereof max. 2 FE or GE FX ports	Up to 26 FE or 8 GE ports, thereof max. 3 FE or 2 GE FX ports
Interfaces		
Power Supply/Signaling Contact	1 x plug-in terminal block. 3-pin. with spring clamps	1 x plug-in terminal block. 6-pin. with spring clamps
USB Interface	n/a	1 x USB for configuration
Power Requirements		
Operating Voltage	12/24 V DC (9.6 to 32 V DC)	12/24 V DC (9.6 to 32 V DC). redundant
Current Consumption at 24 V DC (without PoE)	Max. 250 mA depending on the variant	Max. 360 mA depending on the variant
Power Consumption (without PoE)	1.3 to 6.8 W depending on the variant	2.4 to 9.0 W depending on the variant
Service		
Diagnostics	LEDs (power, link status, data, speed')	LEDs (power, link status, data, speed'), Fault Relay
Configurable Parameters	n/a	Global settings: power supply unit alarm, aging time, QoS 802.Ip 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
Ambient Conditions		
Operation Temperature	0°C to +60°C. -40°C to +70°C (depending on the variant)	-40 °C to +70 °C
Storage/Transport Temperature	-40°C to +85°C (up to 3 month); -40°C to +70°C (up to 1year); -40 °C to +50°C (up to 2 years)	
Relative Humidity(non-condensing)	1% to 95%	
Protective Paint on PCB	n/a	Conformal Coating depending on the variant
Mechanical Construction		
Dimensions (W x H x DJ	26/38 x 102 x 79 mm, 45 x 110 x 88 mm (w/o termmal block) depending on the variant	39/49/56/60 5 x 135/164 x 117/I21 5 mm (w/o termmal block) depending on the variant
Mounting	DIN Rail, Wall Mounting (requires a Mounting Plate)	
Weight	100 g to 250 g depending on the variant	400 g to 1140 g depending on the variant
Protection Class	IP30 (plastic and metal housing)	I P40 (metal housing)
Mechanical Stability		
IEC 60068-2-27 Shock	15 g, 11 ms duration, 18 shocks	
IEC 60068-2-6 Vibration	3.5 mm. 5 Hz to 8.4 Hz. 10 cycles. 1 octave/min. 1 g, 8.4 Hz to 150 Hz. 10 cycles. 1 octave/min	IECEx Zone 2, ISA12.12.01 class 1 div. 2, ATEX Zone 2
EMC Interference Immunity		
EN 61000-4-2 Electrostatic Discharge (ESD)	4 kV contact discharge, 8 kV air discharge	
EN 61000-4-3 Electromagnetic Field	10 V/m (80 to 1000 MHz)	
EN 61000-4-4 Fast Transients (Burst)	2 kV power line, 4 kV data line	
EN 61000-4-5 Surge Voltage	Power line: 2 kV (line/earth), 1 kV (line/line), 1 kV data line	
EN 61000-4-6 Conducted Immunity	10 V (150 kHz to 80 MHz)	
EMC Emitted Immunity		
FCC CFR47 Part 15	FCC CFR47 Part 15 Class A	
EN 55022	EN 55022 Class A	
EMC Emitted Immunity		
Safety of Industrial Control Equipment	cUL 61010-1/61010-2-201 (pending)	
Hazardous Locations	n/a	ISA12.12.0I Class 1 Div. 2, ATEX Class 2 (pending)
Ship	n/a	DNV (pending)
Railway	n/a	EN 50121-4
Road Vehicles	n/a	EI (pending)
Substation	n/a	EN 61850-3, IEEE 1613

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



SPIDER SSR&SPR New Model

Order Code	Product Code	Description
942335003	SSR40-5TX	5 x 10/100/1000Base-T
942335004	SSR40-8TX	8 x 10/100/1000Base-T
942335015	SSR40-6TX/2SFP	6 x 10/100/1000Base-T, 2 X FE/GE SFP Slot
942335017	SPR20-8TX-EEC	8 x 10/100Base-TX
942335020	SPR40-8TX-EEC	8 x 10/100/1000Base-T
942335028	SPR20-8TX/1FM-EEC	8 x 10/100Base-TX, 1x 100Base-FX, MM-SC
942335030	SPR20-7TX/2FM-EEC	7 x 10/100Base-TX, 2 x 100Base-FX, MM-SC
942335031	SPR20-7TX/2FS-EEC	7 x 10/100Base-TX, 2 x 1000Base-FX, SM-SC
942335033	SPR40-1TX/1SFP-EEC	1 x 10/100/1000Base-T, 1x FE/GE SFP Slot





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 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-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	16T1 = 16 x Twisted-Pair, RJ45
04T1 = 4 x Twisted-Pair, RJ45	22T1 = 22 x Twisted-Pair, RJ45
05T1 = 5 x Twisted-Pair, RJ45	24T1 = 24 x Twisted-Pair, RJ45
06T1 = 6 x Twisted-Pair, RJ45	
07T1 = 7 x Twisted-Pair, RJ45	
08T1 = 8 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 = Multimode, 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



LEMUR – Lite Managed Switches

Cost-effective with advanced data rates and low maintenance requirements.

The new LEMUR lite managed switch family offers the most advanced data rates for the price point, up to 11 ports, PoE/PoE+ options, IP30 protection and an extended temperature range of -40°C to +60°C. LEMUR using the cost-optimized design provides the best functionality for the price point, including full gigabit Ethernet and compact housing. Combined with intuitive HiEOS Hirschmann Entry operating system graphical user interface, makes the configuration process much easier.

The Benefits

- Intuitive web interface allows users to configure and monitor without any special IT know-how.
- Enhanced security – developed in accordance with secure development lifecycle process IEC 62443-4-1.
- Power over Ethernet (PoE) and PoE+ options, offering up to 180 W power with no need for a separate power supply.
- High data rates with up to full Gigabit speeds and 7 copper ports, 3 SFP ports, and 1 SFP/copper combo port

Markets

- Machine Building
- Food and Beverage
- Consumer packaged goods
- Airports
- Mass Transit

Technical Information

Product Description				
Type	LRS30-7TX/3SFP-1C	LRS32-7TX/3SFP-1C	LRS40-7TX-3SFP/1C	LRS42-7TX/3SFP-1C
Description	Lite Managed Industrial ETHERNET Rail-Switch, Ethernet/Fast-Ethernet/Full-Gigabit-Ethernet Switch with Gigabit Uplink, Store and Forward Switching Mode, PoE+ variants, fanless design			
Port Type and Quantity	7 x 10/100BASE-TX, 3 x100/1000BASE-FX SFP, 1 x Combo(10/100/1000BASE-TX and 100/1000BASE-FX SFP)	7 x 10/100BASE-TX, 3 x 100/1000BASE-FX SFP, 1 x Combo (10/100/1000BASE-TX and 100/1000BASE-FX SFP)PoE+ on 8 TX ports, PoE power budget max. 180 W	7 x 10/100/1000BASE-TX, 3 x 100/1000BASE-FX SFP, 1 x Combo (10/100/1000BASE-TX and 100/1000BASE-FX SFP)	7 x 10/100/1000BASE-TX, 3 x 100/1000BASE-FX SFP1 xCombo (10/100/1000BASE-TX and 100/1000BASE-FX SFP)PoE+on 8 TX ports, PoE power budget max. 180 W
Order No.	942-328-005	942-328-006	942-328-003	942-328-004
Communication Interfaces				
LEDs	Power, port state, PoE			
Network Size – Length of Cable				
Twisted Pair (TP)	0-100 m			
Power Requirements				
Power Supply Connector	1 x plug-in terminal block, 6-pin	1 x plug-in terminal block, 6-pin	1 x plug-in terminal block, 6-pin	1 x plug-in terminal block, 6-pin
Operating Voltage	24 VDC	48 VDC (PoE) / 54 VDC (PoE+)	24 VDC	48 VDC (PoE) / 54 VDC (PoE+)
Voltage range incl. max. tolerances	9.6 - 32 VDC	46 - 57 VDC	9.6 - 32 VDC	46 - 57 VDC
Software				
Management	LLDP (802.1AB), LLDP-MED, Password change on first login, SSHv2, HTTP, HTTPS, Responsive GUI, SNMP v1/v2/v3, Traps, Telnet, TFTP, Dual Software Image Support			
Diagnose	Management Address Conflict Detection, LEDs, Device Status Indication, Syslog, Link Speed and Duplex Monitoring, RMON (1, 2, 3, 9), Port Mirroring 1:1, Port Mirroring N:1, System Information, SFP Management			
Configuration	Web-based Management, HiDiscovery, Command Line Interface (CLI), Full-featured MIB Support			
Security	MAC Address Limit Per Port, Restricted Management Access, Appropriate Use Banner, Multiple Privilege Levels, Local User Management			
Redundancy Functions	MRP Client, RSTP 802.1D-2004 (IEC62439-1), ERPS* (G.8032), ERPS* v2 (G.8032)			
Switching	Static Unicast/Multicast Address Entries, VLAN (802.1Q), Independent VLAN Learning, QoS/Port Prioritization (802.1D/p), TOS/DSCP Prioritization, CoS Queue Management, Queue-Shaping/Max. Queue Bandwidth, Jumbo Frames, IGMP Snooping/Querier (v1/v2/v3), Unknown Multicast Filtering, IGMP Group Filtering per Port, Flow Control (802.3X), Egress Interface Shaping, Ingress Storm Protection			
Miscellaneous	PoE (802.3AF), PoE+ (802.3AT)			
Time Synchronization	NTP Client			
Ambient Conditions				
Operating Temperature	-40°C 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) mm	68 mm x 135 mm x 118 mm			
Weight	680 g	720 g	680 g	720 g
Approvals				
Basis Standard	cUL 61010-1			
Safety of Industrial Control Equipment	UL61010-1/-2-201**			
Reliability				
Warranty	5 Years Standard			
Scope of Delivery and Accessories				
Scope of Delivery	Device, Terminal Block, Start-up Instructions, Saftey Instructions			
Accessories to Order Separately	SFP Transceivers, Rail Power Supply, Mounting Accessories			

* Coming soon

** Approval pending



Technical Information

Product Description		
Type	LRS32-7TX/3SFP-1C-HP	LRS42-7TX/3SFP-1C-HP
Description	Lite Managed Industrial ETHERNET Rail-Switch, Ethernet/Fast-Ethernet/Full-Gigabit-Ethernet Switch with Gigabit Uplink, Store and Forward Switch- ing Mode, PoE+ variants, fanless design	
Port Type and Quantity	7 x 10/100BASE-TX, 3 x 100/1000BASE-FX SFP, 1 x Combo (10/100/1000BASE-TX and 100/1000BASE-FX SFP)PoE+on 8 TX ports, PoE power budget max. 240 W	7 x 10/100/1000BASE-TX, 3 x 100/1000BASE-FX SFP, 1 x Combo (10/100/1000BASE-TX and 100/1000BASE-FX SFP)PoE+on 8 TX ports, PoE power budget max. 240 W
Order No.	942-328-106	942-328-104
Communication Interfaces		
LEDs	Power, port state, PoE	
Network Size – Length of Cable		
Twisted Pair (TP)	0-100 m	
Power Requirements		
Power Supply Connector	1 x plug-in terminal block, 6-pin	
Operating Voltage	48 VDC (PoE) / 54 VDC (PoE+)	
Voltage range incl. max. tolerances	46 - 57 VDC	
Software		
Management	LLDP (802.1AB), LLDP-MED, Password change on first login, SSHv2, HTTP, HTTPS, Responsive GUI, SNMP v1/v2/v3, Traps, Telnet, TFTP, Dual Soft- ware Image Support	
Diagnose	Management Address Conflict Detection, LEDs, Device Status Indication, Syslog, Link Speed and Duplex Monitoring, RMON (1, 2, 3, 9), Port Mirroring 1:1, Port Mirroring N:1, System Information, SFP Management	
Configuration	Web-based Management, HiDiscovery, Command Line Interface (CLI), Full-featured MIB Support	
Security	MAC Address Limit Per Port, Restricted Management Access, Appropriate Use Banner, Multiple Privilege Levels, Local User Management	
Redundancy Functions	MRP Client, RSTP 802.1D-2004 (IEC62439-1), ERPS* (G.8032), ERPS* v2 (G.8032)	
Switching	Static Unicast/Multicast Address Entries, VLAN (802.1Q), Independent VLAN Learning, QoS/Port Prioritization (802.1D/p), TOS/DSCP Prioritiza- tion, CoS Queue Management, Queue-Shaping/Max. Queue Bandwidth, Jumbo Frames, IGMP Snooping/Querier (v1/v2/v3), Unknown Multicast Filtering, IGMP Group Filtering per Port, Flow Control (802.3X), Egress Interface Shaping, Ingress Storm Protection	
Miscellaneous	PoE (802.3AF), PoE+ (802.3AT)	
Time Synchronization	NTP Client	
Ambient Conditions		
Operating Temperature	-40°C to +60°C	
Storage/Transport Tempera- ture	-40°C to + 85°C	
Relative Humidity (non- condens- ing)	5% to 95%	
Mechanical Construction		
Mounting	DIN Rail	
Protection Class	IP30	
Dimensions (W x H x D) mm	68 mm x 135 mm x 118 mm	
Weight	720 g	
Approvals		
Basis Standard	cUL 61010-1	
Safety of Industrial Control Equip- ment	UL61010-1/-2-201**	
Reliability		
Warranty	5 Years Standard	
Scope of Delivery and Accessories		
Scope of Delivery	Device, Terminal Block, Start-up Instructions, Saftey Instructions	
Accessories to Order Sepa- rately	SFP Transceivers, Rail Power Supply, Mounting Accessories	

* Coming soon

** Approval pending



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 – Cascadability				
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



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 Configurations

Configurator



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Design		Hardware Type		Number of Fast Ethernet Ports		Number of Gigabit Ethernet Ports		Type1/Type2 Uplink Ports		Temperature Range		Voltage Range		Housing		Approvals Part 1		Approvals Part 2		Software Packages		OEM Type		Technology		Software Configuration		Software Version		Software Release															
BRS2 = 100 Mbit/s Ports BRS3 = 100/1000 Mbit/s Ports BRS4 = 1000 Mbit/s Ports BRS5 = 1000/2500 Mbit/s Ports		0 = Standard 2 = PoE/PoE + support		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		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		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		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		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)		C = IP30 D = IP30 metal E = IP40 metal		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/IEEx		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		9 = None Y = cUL61010 X = cUL61010, ISA12.12.01		U = DNVGL W = ATEX/IEEx T = EN50121		9 = No software packages		HH = Standard		S = Standard		E = Hirschmann Standard Configuration P = Profinet		S = HiOS Layer 2 Standard A = HiOS Layer 2 Advanced		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](#)



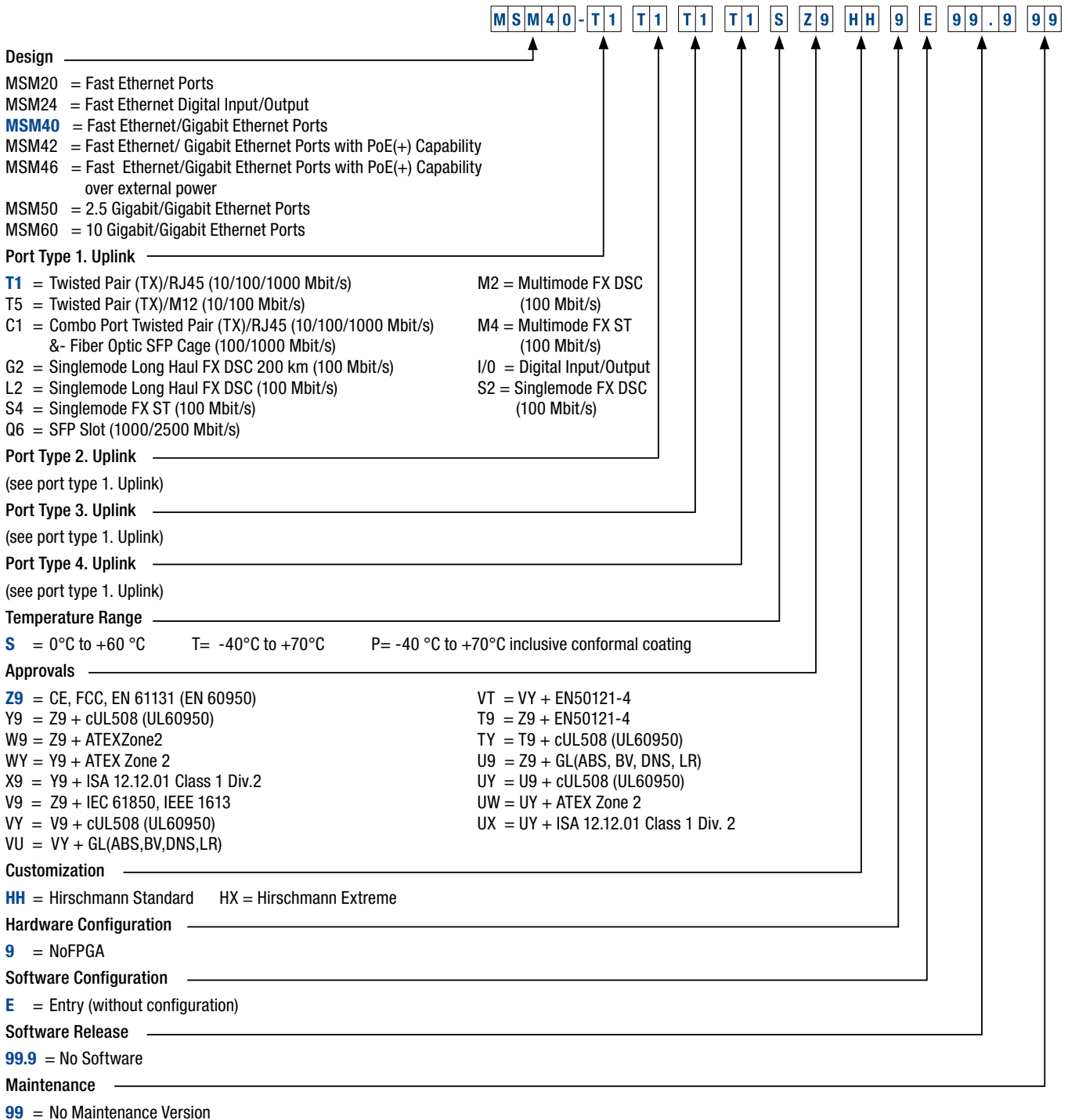
Configurator



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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



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](#)

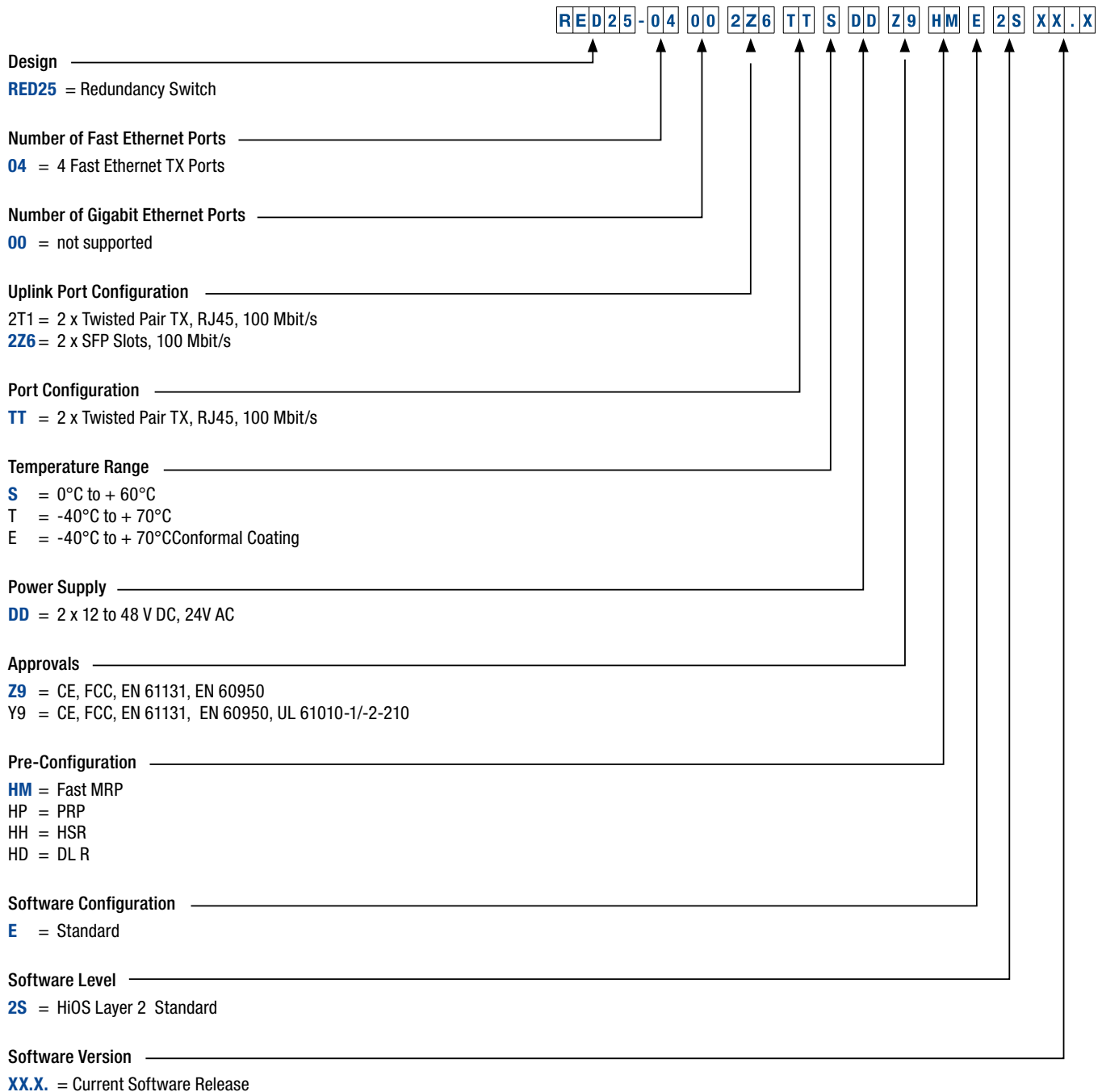


Entry-level Redundancy Switch Configurations

Configurator



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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](#)

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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](#)



GREYHOUND 103 Ethernet Switches

Robust Industrial Access Layer Switches

GREYHOUND 103 Ethernet switches combine hardened industrial hardware with robust switching capabilities to deliver fast, secure, cost-effective and future-proof connectivity.

Hirschmann's GREYHOUND 103 switches support the growing number of devices that need to be interconnected in the IIoT with robust and secure connectivity. With customized configurations, customers pay only for what's needed today, and make a future-proof investment with the ability to expand easily in the field as needs change or grow. Customers using MACH102 media modules can plug-and-play with the new chassis, making network upgrades fast, easy and cost-effective.

Hirschmann's HiOS software is the latest operating system for the new generation of industrial Ethernet devices. Offering intelligent and unique combinations of security mechanisms, diagnostic methods and redundancy protocols, the solution meets every physical and application requirement. The GREYHOUND 103 switches are the perfect platform for applications that do not require high bandwidth, offering cost-effective connectivity for field-level devices, including sensors, actuators and PLCs. Designed to provide maximum uptime, with best-in-class network security, these devices are hardened for extreme environments, reliable, and easy-to-use and maintain.

The Benefits

- More than 20 ports in a 1U fanless rackmount enclosure
- Up to 22 Fast Ethernet ports and 4 Fast/Gigabit combo ports
- Modular design allows for main chassis to be expanded with one or two media modules
- Multimode, single mode, SFP fiber types available
- Operating temperature range of -10°C to +60°C
- 274 W total Power over Ethernet (PoE+) [137 W per module]
- HiOS L2S and L2A software options available
- Free software upgrades in the field

Markets

- Machine Building
- Process Automation
- Energy
- Transportation



Standard Variants

Part Number	Type	Product Description
942 298 001	GRS103-6TX/4C-1HV-2S	4 x FE/GE Combo + 6 x FE TX, expandable with up to two Media Modules (8 FE Ports each), 110-240 VAC Power Supply, -10°C to +60°C, HiOS L2S
942 298 002	GRS103-6TX/4C-1HV-2A	4 x FE/GE Combo + 6 x FE TX, expandable with up to two Media Modules (8 FE Ports each), 110-240 VAC Power Supply, -10°C to +60°C, HiOS L2A
942 298 003	GRS103-6TX/4C-2HV-2S	4 x FE/GE Combo + 6 x FE TX, expandable with up to two Media Modules (8 FE Ports each), Redundant 110-240 VAC Power Supply, -10°C to +60°C, HiOS L2S
942 298 004	GRS103-6TX/4C-2HV-2A	4 x FE/GE Combo + 6 x FE TX, expandable with up to two Media Modules (8 FE Ports each), Redundant 110-240 VAC Power Supply, -10°C to +60°C, HiOS L2A
942 298 005	GRS103-22TX/4C-1HV-2S	4 x FE/GE Combo + 22 x FE TX, 110-240 VAC Power Supply, -10°C to +60°C, HiOS L2S
942 298 006	GRS103-22TX/4C-1HV-2A	4 x FE/GE Combo + 22 x FE TX, 110-240 VAC Power Supply, -10°C to +60°C, HiOS L2A
942 298 007	GRS103-22TX/4C-2HV-2S	4 x FE/GE Combo + 22 x FE TX, Redundant 110-240 VAC Power Supply, -10°C to +60°C, HiOS L2S
942 298 008	GRS103-22TX/4C-2HV-2A	4 x FE/GE Combo + 22 x FE TX, Redundant 110-240 VAC Power Supply, -10°C to +60°C, HiOS L2

Technical Information

Product Description				
Type	GRS103-6TX/4C-1HV-xx	GRS103-6TX/4C-2HV-xx	GRS103-22TX/4C-1HV-xx	GRS103-22TX/4C-2HV-xx
Description	GREYHOUND 103 Series, Managed Industrial Workgroup Switch, fanless design, 19" rack mount, up to 4 fiber ports and 26 ports in total			
Port Type and Quantity	Base unit: 4 x FE/GE Combo + 6 x FE TX Expandable with two Media Modules (8 FE ports per module)		4 x FE/GE Combo + 22 x FE TX	
Additional Interfaces				
USB-C	1 x USB-C (client) for local management			
Power Requirements				
Operating Voltage	100-240 VAC	100-240 VAC (redundant)	100-240 VAC	100-240 VAC (redundant)
Power Consumption	12 W (without media modules)	13 W (without media modules)	16 W	17 W
Ambient Conditions				
Operating Temperature	−10°C to +60°C			
Conformal Coating	Optional			
Mechanical Construction				
Dimensions (W x H x D)	448 x 44 x 310 mm (without fixing bracket)			
Weight	3,60 kg	3,85 kg	3,85 kg	4,10 kg
Protection Class	IP20			
Software				
Supported HiOS Software Levels	Layer 2 Standard (L2S), Layer 2 Advanced (L2A)			
Approvals				
Basis Standard	CE, FCC, EN61131			
Accessories				
Accessories to order separately	SFP Transceiver, ACA22-USB-C (EEC), Industrial HiVision Network Management Software			



Technical Information

Product Description - Media Modules for GREYHOUND					
Type	M1-8MM-SC	M1-8SFP	M1-8SM-SC	M1-8TP-RJ45	M1-8TP-RJ45 PoE
Part Number	943970101	943970301	943970201	943970001	942028001
Port Type and Quantity	8 x FE FX MM-SC	8 x FE SFP	8 x FE SFP	8 x FE SFP	8 x FE PoE
Power Consumption	10 W	11 W (including SFP module)	10 W	2 W	2.2 W (plus up to 120 W PoE per external power supply)
Weight	210 g	130 g	180 g	210 g	220 g



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

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](#)



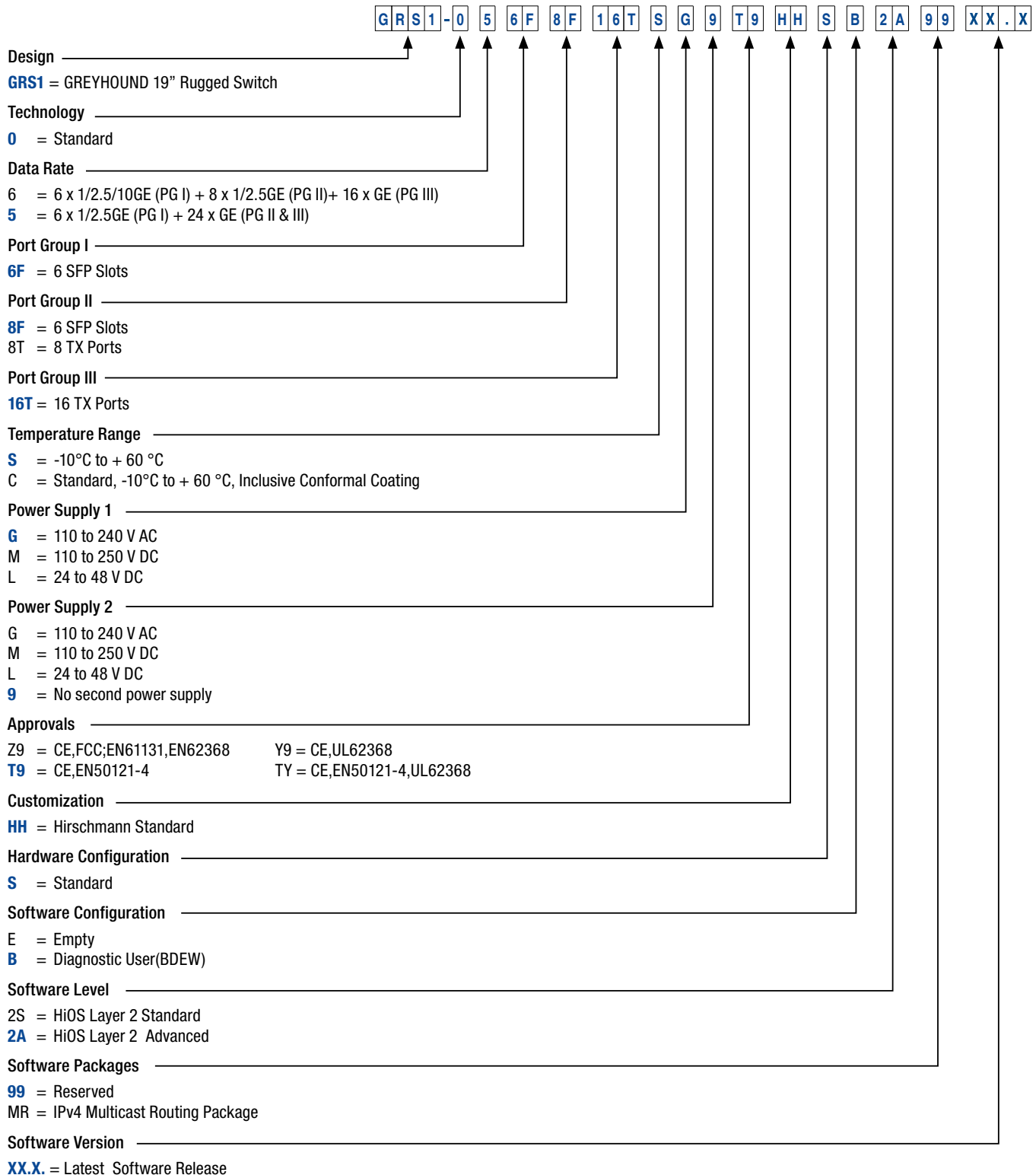
GREYHOUND GRS105/106

Switch Configurations

Configurator



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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	7.8 kg
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	MAR1020-99MMMMMMMMMMMMMMMMMMMMMMMMMMFMHPHH	24 x FE MM-SC, redundant 100-240 V AC power supplies, -40 °C to +85 °C, conformal coating, Classic L2P
943 940-002	MAR1030-40TTTTTTTTTTTTTTTTTTTTTTTTTTTFMMHPHH	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	MAR1040-4C4C4C4C9999SMHPHH	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	MAR1040-4C4C4C4C9999SM9RHH	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



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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)		Temperature Range S = 0°C to + 60°C U = -40°C to + 85 °C		Power Supply 1 (options) C = 24/36/48 V DC (spring clip) G = 110/250 V DC, 110/230 V AC (spring clip)		Power Supply 2 (options) C = 24/36/48 V DC (spring clip) G = 110/250 V DC, 110/230 V AC		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	
MAR1020-99		MMVVZZTTTTTTTTTT99		U		G		C		H		P		E		H		XX.X			

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

Design/Models	Gigabit Ethernet Ports	Fast Ethernet Ports (1 to 24 Ports)	Temperature Range	Power Supply 1 (options)	Power Supply 2 (options)	Approvals	Software Version	Configuration	OEM Type	Software Release
MAR1030-CC	CC	MM	S	C	C	H	P	H	H	XX.X
MAR1032-CC	CC	MM	S	C	C	H	P	H	H	XX.X
MAR1130-CC	CC	MM	S	C	C	H	P	H	H	XX.X
MAR1132-CC	CC	MM	S	C	C	H	P	H	H	XX.X
MAR1030-40	40	MM	U	C	C	H	P	H	H	XX.X
MAR1032-40	40	MM	U	C	C	H	P	H	H	XX.X
MAR1130-40	40	MM	U	C	C	H	P	H	H	XX.X
MAR1132-40	40	MM	U	C	C	H	P	H	H	XX.X
MAR1030-4T	4T	MM	F	C	C	H	P	H	H	XX.X
MAR1032-4T	4T	MM	F	C	C	H	P	H	H	XX.X
MAR1130-4T	4T	MM	F	C	C	H	P	H	H	XX.X
MAR1132-4T	4T	MM	F	C	C	H	P	H	H	XX.X
MAR1030-OT	OT	MM	C	C	C	H	P	H	H	XX.X
MAR1032-OT	OT	MM	C	C	C	H	P	H	H	XX.X
MAR1130-OT	OT	MM	C	C	C	H	P	H	H	XX.X
MAR1132-OT	OT	MM	C	C	C	H	P	H	H	XX.X
MAR1030-99	99	MM	S	C	C	H	P	H	H	XX.X
MAR1032-99	99	MM	S	C	C	H	P	H	H	XX.X
MAR1130-99	99	MM	S	C	C	H	P	H	H	XX.X
MAR1132-99	99	MM	S	C	C	H	P	H	H	XX.X
MAR1030-RR	RR	MM	S	C	C	H	P	H	H	XX.X
MAR1032-RR	RR	MM	S	C	C	H	P	H	H	XX.X
MAR1130-RR	RR	MM	S	C	C	H	P	H	H	XX.X
MAR1132-RR	RR	MM	S	C	C	H	P	H	H	XX.X
MAR1030-NN	NN	MM	S	C	C	H	P	H	H	XX.X
MAR1032-NN	NN	MM	S	C	C	H	P	H	H	XX.X
MAR1130-NN	NN	MM	S	C	C	H	P	H	H	XX.X
MAR1132-NN	NN	MM	S	C	C	H	P	H	H	XX.X
MAR1030-JJ	JJ	MM	S	C	C	H	P	H	H	XX.X
MAR1032-JJ	JJ	MM	S	C	C	H	P	H	H	XX.X
MAR1130-JJ	JJ	MM	S	C	C	H	P	H	H	XX.X
MAR1132-JJ	JJ	MM	S	C	C	H	P	H	H	XX.X
MAR1030-UU	UU	MM	S	C	C	H	P	H	H	XX.X
MAR1032-UU	UU	MM	S	C	C	H	P	H	H	XX.X
MAR1130-UU	UU	MM	S	C	C	H	P	H	H	XX.X
MAR1132-UU	UU	MM	S	C	C	H	P	H	H	XX.X
MAR1030-LL	LL	MM	S	C	C	H	P	H	H	XX.X
MAR1032-LL	LL	MM	S	C	C	H	P	H	H	XX.X
MAR1130-LL	LL	MM	S	C	C	H	P	H	H	XX.X
MAR1132-LL	LL	MM	S	C	C	H	P	H	H	XX.X
MAR1030-GG	GG	MM	S	C	C	H	P	H	H	XX.X
MAR1032-GG	GG	MM	S	C	C	H	P	H	H	XX.X
MAR1130-GG	GG	MM	S	C	C	H	P	H	H	XX.X
MAR1132-GG	GG	MM	S	C	C	H	P	H	H	XX.X

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



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MAR1040-4C4C4C4C999SMLHRHHXX.X

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-MMMMTTTSZ9HHS	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-ZZZZTTTSZ9HHS	4 x FE TX + 4 x FE SFP, 0 °C to +60 °C, media module for GRS1020/30
942 122-201	GRM20-ZZZZZZSZ9HHS	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



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The diagram illustrates the structure of the GRS1 product code, which is a 24-character alphanumeric string. The code is divided into segments, each representing a specific specification. The segments are: G, R, S, 1, 0, 3, 0, -, 1, 6, T, 9, S, M, M, V, 9, H, H, S, E, 2, S, X, X, ., X. The diagram shows the following mappings:

- 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:** 30 (FE-Switch with GE-Uplink Ports; 20 = FE-Switch)
- 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:** M (110 to 250 V DC and 110 to 240 V AC; C = 24 to 48 V DC)
- Power Supply 2:** V9 (No second power supply; C = 24 to 48 V DC; M = 110 to 250 V DC and 110 to 240 V AC)
- Approvals:** 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-MMMMTTTSZ9HHS9	4 x GE TX + 4 x FE MM-SC, 0 °C to +60 °C, media module for GRS1040
942 134-003	GMM32-MMMMTTTSZ9HHS9	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	GMM40-0000000SZ9HHS9	8 x GE SFP, 0 °C to +60 °C, media module for GRS1040
942 134-007	GMM40-TTTTTTTTVYHHS9	8 x GE TX, -40 °C to +70 °C, media module for GRS1040
942 134-008	GMM40-0000000TVYHHS9	8 x GE SFP, -40 °C to +70 °C, media module for GRS1040
942 134-009	GMM42-TTTTTTTTVYHHS9	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																	
T = -40°C to + 70 °C																	
E = -40°C to + 70°C conformal coating																	
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)																	
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																	
UR = Unicast Routing																	
MR = Unicast + Multicast Routing																	
Software Version	↑																
XX.X = Current Software Release																	

* NOTE: Power supplies need to be ordered separately.



BXS Gigabit Ethernet switches

Cost-effective global ethernet switches for rolling stock

Built to comply with international train standards, the Gigabit BXS switches offer industrial engineers and train builders reliable networking and connectivity capabilities onboard road and rail vehicles. The Hirschmann Gigabit BXS switches were uniquely designed for transportation markets. Not only can the switches withstand the high vibration and wide temperature ranges found in road and rail applications, but they meet all electromagnetic compatibility (EMC) and fire prevention requirements for With PoE and optional PoE+ port capabilities, users save costs by eliminating the need for separate cabling to power end devices, such as IP cameras. Additionally, TSN technology on all ports enables precise data transmission and guarantees bandwidth for dedicated network services. Designed for transportation markets. Not only can the switches withstand the high vibration and wide temperature ranges found in road and rail applications, but they meet all electromagnetic compatibility (EMC) and fire prevention requirements for rail vehicles.

With PoE and optional PoE+ port capabilities, users save costs by eliminating the need for separate cabling to power end devices, such as IP cameras. Additionally, TSN technology on all ports enables precise data transmission and guarantees bandwidth for dedicated network services.

Your Benefits

- 60 W PoE power supply and optional PoE+ enables terminal equipment to be powered without additional cables
- Vibration-proof M12 connectors for uninterrupted communication
- EMC and fire prevention compliant
- Real-time TSN Ethernet support for precise data transmission
- Advanced security features, including wire-speed access control lists (ACL) and automatic denial-of-service (DoS) prevention
- Extended temperature range of -40°C to +70°C
- Compact, IP40 metal enclosure
- Built-in Layer 2 protocols and holistic diagnostics
- Supports HiOS software

Markets

- Rolling stock
- Subway
- Train



Technical Information

Product Description				
Type	BXS30	BXS32	BXS40	BXS42
Description	Managed IP40 switch with optional PoE (+); 12 ports, 4 Gigabit-Ethernet and 8 Fast-Ethernet or 12 Gigabit-Ethernet M12-ports			
Port Type and Quantity	4 Gigabit-Ethernet M12-ports X-coded and 8 Fast-Ethernet M12-ports D-coded	4 Gigabit-Ethernet M12-ports X-coded and 8 Fast-Ethernet M12-ports D-coded	12 Gigabit-Ethernet M12-ports X-coded	12 Gigabit-Ethernet M12-ports X-coded
Additional Interfaces				
Local Management and Device Replacement	M12 (USB-C)			
LEDs	Port, Power, ACA, PoE			
Power over Ethernet				
Port Type and Quantity*	4 Gigabit-Ethernet, thereof 3 PoE* and 8 Fast-Ethernet, thereof 8 PoE or 12 Gigabit-Ethernet thereof 11 PoE*			
Power Requirements				
Operating Voltage*	24 V DC or 72-110 V DC; 24-48 V DC or 72-110 V DC for PoE variants			
Power Consumption	10 -13 W Switch, 46 - 50 W at 30 W PoE output, 83 - 86 W at 60 W PoE output			
Mechanical Construction				
Dimensions (W x H x D) mm	282 mm x 143.6 mm x 91 mm			
Housing	Metal			
Mounting	Wall mountable with bottom side			
Weight*	2.15 - 2.63 kg			
Protection Class	IP40			
Software				
Supported HiOS Software Levels	Layer 2 Advanced (L2A)			
Software Layer 2				
Management	Dual Software Image Support, TFTP, SFTP, SCP, LLDP (802.1AB), LLDP-MED, SSHv2, HTTP, HTTPS, Traps, SNMP v1/v2/v3, Telnet, IPv6 Management			
Diagnostics	Management Address Conflict Detection, MAC Notification, Signal Contact, Device Status Indication, TCPDump, LEDs, Syslog, Persistent Logging on ACA, Port Monitoring with Auto-Disable, Link Flap Detection, Overload Detection, Duplex Mismatch Detection, Link Speed and Duplex Monitoring, RMON (1,2,3,9), Port Mirroring 1:1, Port Mirroring 8:1, Port Mirroring N:1, Port Mirroring N:2, System Information, Self-Tests on Cold Start, Copper Cable Test, SFP Management, Configuration Check Dialog, Switch Dump			
Configuration	Automatic Configuration Undo (roll-back), Configuration Fingerprint, Text-based Configuration File (XML), Backup config on a remote server when saving, Clear config but keep IP settings, BOOTP/DHCP Client with Auto-Configuration, DHCP Server: per Port, DHCP Server: Pools per VLAN, AutoConfiguration Adapter ACA21/22 (USB), HiDiscovery, USB-C Management support, Command Line Interface (CLI), CLI Scripting, CLI script handling over ENVM at boot, Full-featured MIB Support, Context-sensitive Help, HTML5 based Management			
Security	MAC-based Port Security, Port-based Access Control with 802.1X, Guest/unauthenticated VLAN, Integrated Authentication Server (IAS), RADIUS VLAN Assignment, Denial-of-Service Prevention, DoS Prevention Drop Counter, VLAN-based ACL, Ingress VLAN-based ACL, Basic ACL, Access to Management restricted by VLAN, Device Security Indication, Audit Trail, CLI Logging, HTTPS Certificate Management, Restricted Management Access, Appropriate Use Banner, Configurable Password Policy, Configurable Number of Login Attempts, SNMP Logging, Multiple Privilege Levels, Local User Management, Remote Authentication via RADIUS, User Account Locking, Password change on first login			
Redundancy Functions	HIPER-Ring (Ring Switch), Link Aggregation with LACP, Link Backup, Media Redundancy Protocol (MRP) (IEC62439-2), Redundant Network Coupling, RSTP 802.1D-2004 (IEC62439-1), RSTP Guards			
Switching	Independent VLAN Learning, Fast Aging, Static Unicast/Multicast Address Entries, QoS / Port Prioritization (802.1D/p), TOS/DSCP Prioritization, Interface Trust Mode, CoS Queue Management, Queue-Shaping / Max. Queue Bandwidth, Flow Control (802.3X), Egress Interface Shaping, Ingress Storm Protection, Jumbo Frames, VLAN (802.1Q), GARP VLAN Registration Protocol (GVRP), Voice VLAN, GARP Multicast Registration Protocol (GMRP), IGMP Snooping/Querier per VLAN (v1/v2/v3), Unknown Multicast Filtering, Multiple VLAN Registration Protocol (MVRP), Multiple MAC Registration Protocol (MMRP), Multiple Registration Protocol (MRP)			
Security	MAC-based Port Security, Port-based Access Control with 802.1X, Guest/unauthenticated VLAN, Integrated Authentication Server (IAS), RADIUS VLAN Assignment, Denial-of-Service Prevention, DoS Prevention Drop Counter, VLAN-based ACL, Ingress VLAN-based ACL, Basic ACL, Access to Management restricted by VLAN, Device Security Indication, Audit Trail, CLI Logging, HTTPS Certificate Management, Restricted Management Access, Appropriate Use Banner, Configurable Password Policy, Configurable Number of Login Attempts, SNMP Logging, Multiple Privilege Levels, Local User Management, Remote Authentication via RADIUS, User Account Locking, Password change on first login			
Standardized Real-Time Ethernet	TSN, Time Sensitive Network			
Time Synchronization	PTPv2 Transparent Clock two-step, PTPv2 Boundary Clock, BC with Up to 8 Sync / s , 802.1AS, Buffered Real Time Clock, SNTP Client, SNTP Server			
Industrial Profiles	EtherNet/IP Protocol**, IEC61850 Protocol (MMS Server, Switch Model), Modbus TCP, PROFINET Protocol**			
Miscellaneous	Manual Cable Crossing, Port Power Down PoE (802.3af), PoE+ (802.3at), PoE+ Manual Power Management, PoE Fast Startup			
Information	Please note that the feature set available at product launch can be different.			



Ambient Conditions	
Operating Temperature	-40 °C to +70 °C, attention to derating rules
Relative Humidity (non-condensing)	10% to 95%, non condensing
Air pressure	Operating hight max. 3000 m
Approvals Configurable	
Safety of Industrial Control Equipment*	EN 62368-1, UL 61010-2-201 & CSA C22.2 NO. 61010-2-201:18*
Mechanical Standards	EN 60068-2-6
EMC Interference Emission*	EN 61131-2, EN 50155, EMV 06, EN 50121-4, FCC 47CFR, EN 61000-6-4, EN 55032
EMC Interference Immunity*	EN 61131-2, EN 50155, EN 50121-4, FCC 47CFR, EN 61000-6-2, EN 61000-3-2, EN 61000-3-3
Transportation*	EN 50155, EN 45545 HL3, EN 50121-4, NEMA TS2,E1, ECE R118
Accessories	
Device Replacement and Logging	ACA22-M12-C (EEC)



BXP Bobcat eXtreme Performance managed switch

Rugged High port count switch for rail rolling stock

The Hirschmann BXP (BOBCAT eXtreme Performance) managed switch offers a compact design, enhanced flexibility and interoperability, and speeds of up to 10 Gbps for railway rolling stock applications. BXP has 20 port and 28 port variants, with up to 6 x 10 Gigabit Ethernet ports to support future-ready networks. Last but not least BXP has up to 120W PoE budget with PoE++ to meet the needs of onboard devices with high power demands.

Designed to withstand the harsh environments of moving trains, the ruggedized Hirschmann BXP switch offers high speeds and high port counts to support deployment of future-ready onboard networks.

Your Benefits

- BXP optimizes operational continuity by implementing advanced redundancy protocols, like HSR and PRP.
- Advanced network security via the Hirschmann operating system (HiOS) to suit the needs of train operators and builders.
- Simplified deployment and maintenance via an intuitive HTML5 web interface.
- Flexibility with 10 Gigabit Ethernet and Layer 2 or Layer 3 switch configuration options in a single device.
- Low long-term cost of ownership due to high port counts, low maintenance requirements and PoE++ capability.
- The addition of a Bypass function (BP) ensures continuity in the event of a power failure, providing added reassurance for customers.



Popular Part Numbers/Product Configurations

Product Code 9 Digit number Speaking name		
Part No.	Order No.	Description
BXP62-140006IISHF9-EMBFS9HHSE2AXX.X.XX	942334001	BXP62-20TX-EECC-HV-2A
BXP62-140006IISHF9-EMBFS9HHSE3AXX.X.XX	942334002	BXP62-20TX-EECC-HV-3A
BXP62-220006IISHFF-EMBFS9HHSE2AXX.X.XX	942334003	BXP62-28TX-EECC-HV-2A
BXP62-220006IISHFF-EMBFS9HHSE3AXX.X.XX	942334004	BXP62-28TX-EECC-HV-3A
BXP62-140006KKSHF9-EMBFS9HHSE2AXX.X.XX	942334005	BXP62-20TX-EECC-HV-2A-BP
BXP62-140006KKSHF9-EMBFS9HHSE3AXX.X.XX	942334006	BXP62-20TX-EECC-HV-3A-BP
BXP62-220006KKSHFF-EMBFS9HHSE2AXX.X.XX	942334007	BXP62-28TX-EECC-HV-2A-BP
BXP62-220006KKSHFF-EMBFS9HHSE3AXX.X.XX	942334008	BXP62-28TX-EECC-HV-3A-BP
BXP60-140006IIIGE9-ENBFS9HHSE2AXX.X.XX	942334009	BXP60-20TX-EECC-HV-2A
BXP60-140006IIIGE9-ENBFS9HHSE3AXX.X.XX	942334010	BXP60-20TX-EECC-HV-3A
BXP60-220006IIIGEE-ENBFS9HHSE2AXX.X.XX	942334011	BXP60-28TX-EECC-HV-2A
BXP60-220006IIIGEE-ENBFS9HHSE3AXX.X.XX	942334012	BXP60-28TX-EECC-HV-3A
BXP60-140006KKIGE9-ENBFS9HHSE2AXX.X.XX	942334013	BXP60-20TX-EECC-HV-2A-BP
BXP60-140006KKIGE9-ENBFS9HHSE3AXX.X.XX	942334014	BXP60-20TX-EECC-HV-3A-BP
BXP60-220006KKIGEE-ENBFS9HHSE2AXX.X.XX	942334015	BXP60-28TX-EECC-HV-2A-BP
BXP60-220006KKIGEE-ENBFS9HHSE3AXX.X.XX	942334016	BXP60-28TX-EECC-HV-3A-BP



Technical Information

Product description

Description	Managed IP40 Switch in accordance with IEEE 802.3, store-and-forward-switching, HiOS Software Layer 2 Advanced, 10 Gigabit-Ethernet (10000 MBit/s) and Gigabit-Ethernet (1000 MBit/s), power sourcing equipment in accordance with IEEE 802.3at (PoE+ inline power), PoE support in total up to 120W using 10GE-and 1GE-M12 ports.
Port type and quantity	In total 20 ports; 10 G/1G Ethernet TP Ports: 6, thereof 2 Ports PoE++; Gigabit Ethernet Ports: 14, thereof 2 Ports PoE++ and 10 Ports PoE+.
Order number / product code	942334001 /BXP62-20TX-EECC-HV-2A

More Interfaces

Power supply/signaling contact	M12 5-pin plug, "K"-coding for non-SELV / "L"-coding for SELV
V.24 interface	1 x M12 4-pin socket, A coding
SD-Card interface	Yes

Network size - length of cable

Twisted Pair (TP)	0-100 m (XG: CAT7-cable, GE: > CAT5E)
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Network size - cascading

Line - / star topology	any
Redundant topologies	MRP, RSTP, MSTP

Power requirements

Operating Voltage	110 V
Power budget and consumption	max. 150 W with 120W PoE
Power output in BTU (IT)/h	290

Software

Management	DNS Client, Dual Software Image Support, TFTP, SFTP, SCP, LLDP (802.1AB), LLDP-MED, SSHv2, V.24, HTTP, HTTPS, Traps, SNMP v1/v2/v3, Telnet, OPC UA Server, IPv6 Management
Diagnostics	LEDs, 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 N:1, RSPAN, SFLOW, VLAN Mirroring, System Information, Self-Tests on Cold Start, Copper Cable Test, SFP Management, Configuration Check Dialog, Switch Dump, Snapshot Configuration Feature, Port Mirroring N:2
Configuration	Automatic Configuration Undo (roll-back), Configuration Fingerprint, Text-based Configuration File (XML), BOOTP/DHCPv4/DHCPv6 Client with Auto-Configuration, DHCPv4/DHCPv6 Server: per Port, DHCP Server: Pools per VLAN, Auto-Configuration Adapter ACA31 (SD-card), HiDiscovery, DHCP Relay with Option 82, Command Line Interface (CLI), CLI Scripting, Full-featured MIB Support, Web-based Management, Context-sensitive Help, Backup config on a remote server when saving, Clear config but keep IP settings, HTML5 based Management
Security	MAC-based Port Security, Port-based Access Control with 802.1X, Guest/unauthenticated VLAN, Integrated Authentication Server (IAS), RADIUS VLAN Assignment, 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, IPv6-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, Format options for MAC authentication bypass, Password change on first login, Secure Boot
Redundancy	HIPER-Ring (Ring Switch), HIPER-Ring over Link Aggregation, Link Aggregation with LACP, Link Backup, Media Redundancy Protocol (MRP) (IEC62439-2), MRP over Link Aggregation, Redundant Network Coupling, Sub Ring Manager, RSTP 802.1D-2004 (IEC62439-1), RSTP Guards, MSTP
Industrial Profiles	-
Time synchronisation	PTPv2 Transparent Clock two-step, PTPv2 Boundary Clock, Buffered Real Time Clock, SNTP Client, SNTP Server
Miscellaneous	PoE (802.3AF), PoE+ (802.3AT), PoE+ Manual Power Management, PoE Fast Startup, Manual Cable Crossing, Port Power Down
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, IPv4/IPv6 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) , Layer 2 Loop Protection, ICMPv6 support and MLD snooping

Ambient conditions

Operating temperature	40-+70 °C base plate cooling
Storage/transport temperature	40-+85 °C
Relative humidity (also condensing)	5 -100 %
Protective paint on PCB	Yes (conformal coating)

Mechanical construction

Dimensions (WxHxD)	428mm x 168,9mm x 117,6mm
Weight	6100 g
Mounting	Flat surface mounting
Protection class	IP40

Mechanical stability

IEC 60068-2-27 shock	Vertical: 3 g, 30 ms duration, horizontal 5 g, 30 ms duration
IEC 60068-2-6 vibration	Operational: 5 Hz ... 150 Hz, Broadband noise vertical: 1,0 m/s ² (rms) horizontal: 0,7 m/s ² (rms) Non operational: 5 Hz ... 150 Hz, Broadband noise vertical: 7,9 m/s ² (rms) horizontal: 5,5 m/s ² (rms)



Technical Information

EMC interference immunity	
EN 61000-4-2 electrostatic discharge (ESD)	6 kV Contact discharge, 8 kV Air discharge
EN 61000-4-3 electromagnetic field	20 V/m (80-3000 MHz)
EN 61000-4-4 fast transients (burst)	2 kV power line, 2 kV data line
EN 61000-4-5 surge voltage	power line: 2 kV (line/earth), 1 kV (line/line), 1 kV data line
EN 61000-4-6 conducted Immunity	10 V (150 kHz-80 MHz)
EN 61000-4-9 impulse magnetic field immunity	300 A/m
EMC emitted immunity	
FCC CFR47 Part 15	FCC 47 CFR Part 15 Class A
EN 55022	EN 55022 Class A
Approvals	
Basis Standard	CE, FCC, EN61131
Safety of industrial control equipment	UL 61010-1/-2-201
Railway norm	EN 50155, EN 50121-4, EMV06
Fire protection in rail vehicles	EN 45545-2 HL3
Scope of delivery and accessories	
Scope of delivery	1 × Device, 1 x connector for power connection, General safety instructions



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](#)

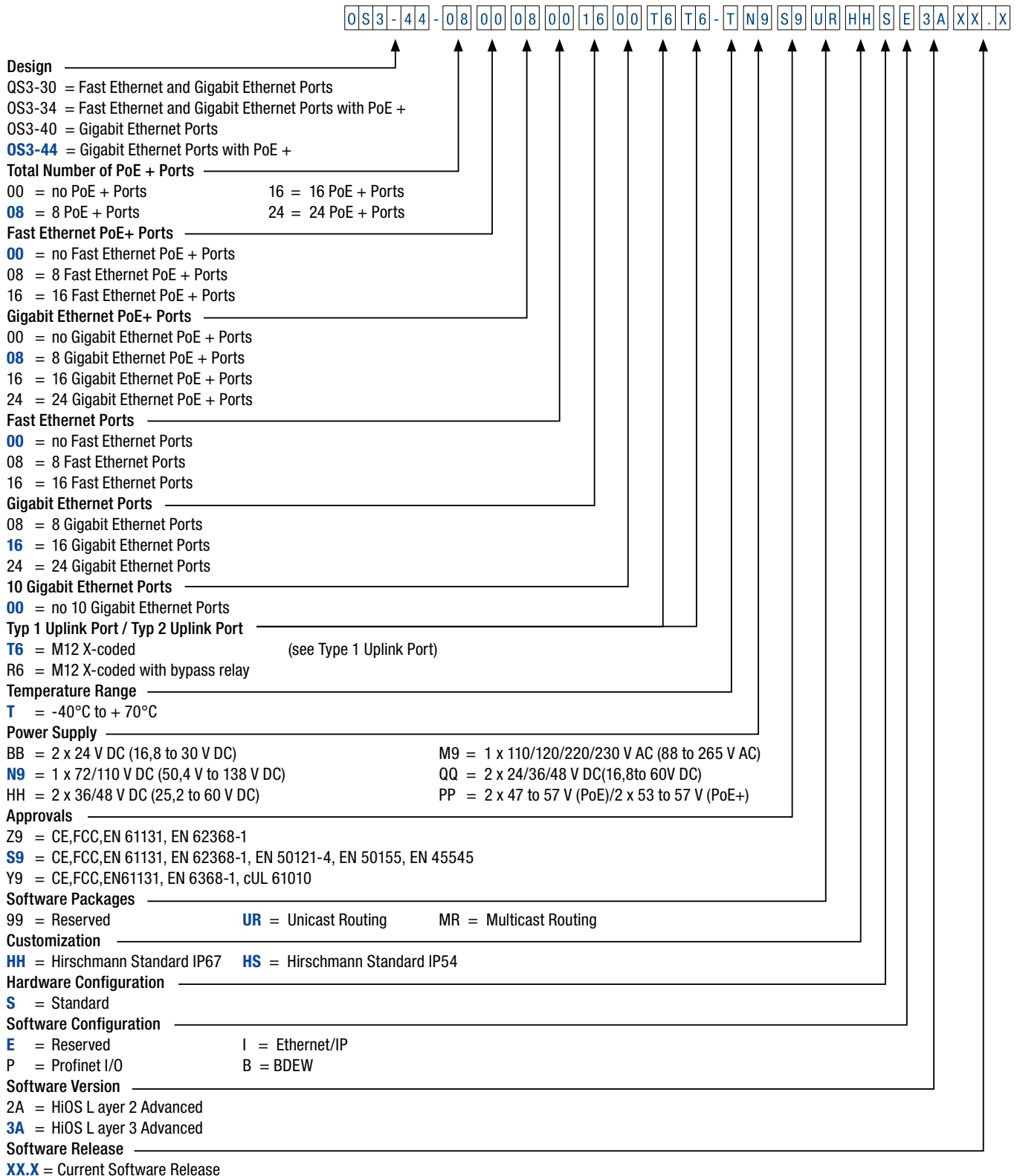


Full Gigabit OCTOPUS III Configurations

Configurator



catalog.belden.com





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

	E	a	g	l	e	O	n	e	-	0	2	0	0	T	1	T	1	T	D	D	Z	9	0	0	0	0	H	H	E	X	X	.	X	.	X	X
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°C to + 60°C																																				
T = -40°C to + 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																		UT = U9 + cUL508 + EN 50121-4																		
Y9 = Z9 + cUL508																		T9 = Z9 + EN50121-4																		
X9 = Z9 + cUL508, ISA12.12																		TY = T9 + cUL508																		
W9 = Z9 + ATEX																		V9 = Z9 + IEC 61850, IEEE 1613																		
WX = X9 + ATEX																		VY = V9 + cUL508																		
U9 = Z9 + GL																		VU = V9 + cUL508, GL																		
UY = U9 + cUL508																		VT = V9 + cUL508, EN 50121																		
UX = U9 + cUL508, ISA12.12																																				
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.



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 - Industrial HiVision, 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 Learning 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



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	Eagle 40-03	Eagle 40-07	E	A	G	L	E	4	0	-	0	3	3	T	1	T	C	C	Z	9	H	S	R	A	N	F	X	X	.	X	.	X	X	-	N	T
Design/Model																																				
EAGLE40 = Security Router and Firewall	x	x																																		
Gigabit Ethernet Ports																																				
03 = 3 x 1000 Mbit/s	x																																			
07 = 7 x 1000 Mbit/s		x																																		
Type Uplink Ports																																				
3T1 = 3 x Twisted pair RJ45	x																																			
106 = 1 x SFP, 2x Twisted pair RJ45	x																																			
206 = 2 x SFP, 5x Twisted pair RJ45		x																																		
Temperature Range																																				
S = 0°C to + 60°C	x	x																																		
T = -40°C to + 70°C	x	x																																		
E = -40°C to + 70°C inclusive Conformal Coating	x	x																																		
Voltage Range																																				
CC = 2 x 24-48 V DC	x	x																																		
Approvals																																				
Z = CE, FCC, EN 61131, (EN 62368)	x																																			
A = CE, FCC, (EN 62368)		x																																		
Y = "Z" + UL62368	x	x																																		
B = "A" + UL62368	x																																			
X = "Z" + UL62368 + ISA 12.12 + ATEX		x																																		
C = "A" + IEC61850-3, IEEE1613	x																																			
T = "Z" + EN 50121-4																																				
Approvals																																				
9 = No additional Approval	x	x																																		
Y = + UL62368	x	x																																		
OEM Type																																				
HS = Hirschmann Standard	x	x																																		
Configuration																																				
R = Router Mode	x	x																																		
S = Stealth Mode (Tofino)																																				
T = Transparent Mode	x	x																																		
Intrusion Detection System (IDS)																																				
A = Sensor	x	x																																		
B = Server																																				
Security Modules																																				
NF = No additional modules, firewall only	x	x																																		
IN = Industrial Automation Protection Suite (Ethernet/IP + Modbus + OPC Enforcer)	x	x																																		
SU = Substation Protection Suite (IEC104 + DNP3 + GOOSE + Modbus Enforcer)																																				
UN = Unified Protection Suite (All Enforcers)																																				
Software Version																																				
XX.X.XX = Current Software Release	x	x																																		
03.5.00 = Software Release 3.5	x	x																																		



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](#)



Configurator



catalog.belden.com

OpenBAT Configurations

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

Design/Models	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	XX	.XX	.XX	XX	XX
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 = WLAN 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																																
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																																
O7 = Combo Gigabit Ethernet																																
O5 = 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

	B	A	T	8	6	7	-R	E	U	W	9	9	A	U	9	9	9	A	T	1	9	9	L	9	9	9	Z	H	X	X	.	X	X	.	X	X	X	X
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





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



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	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	XX	.	XX	.	XX	XX
Product																																				
BAT450-F = IP65-/67-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																																				
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 B = VPN-50																																				
C = VPN-100 9 = None																																				
Software Option 2																																				
9 = None																																				
Software Option 3																																				
D = Public Spot P = PRP																																				
A = AutoWDS 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.



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:	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

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

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





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](#)



Belden Horizon

Next-Gen IT/OT Management Software

Belden Horizon™ is a cloud-native platform that provides secure, OT-centric services for deploying, connecting, and managing OT devices and applications.

The trend in industrialized markets towards digitization is real. Organizations are aware of the tremendous business value that insights gleaned from their operational data can provide, and they are eager to implement data collection, visualization, and analysis solutions that transform operational data into valuable insights. Belden Horizon™ provides critical software for the onboarding, monitoring, and updating of the edge compute devices and the management and

orchestration of the edge applications that are used by industrial businesses to improve their efficiency, maximize uptime, and enable continuous process improvement.

Moreover the Belden Horizon™ remote access capability provides users with the peace of mind that the edge-to-cloud link is protected from rising and sophisticated cybersecurity concerns. This secure remote access service is complemented further by a persistent data network capability that allows users to shift their remote connectivity from an “on-demand” to “always-on” state without the need for any local software installation.

Your Benefits

- Simplify OT device and application management using a single, modern, cloud interface
- Scale industrial edge deployments with the ability to onboard, monitor, and update connected edge gateway devices and to deploy and orchestrate edge applications
- Remotely and securely manage connections with on-demand Secure Remote Access and always-on Persistent Data Network connections.

Markets

- Manufacturing
- Energy
- Transportation
- Utilities
- Machine Building

PROVIZE Planner & Explorer

Intent-Based Network Planning and Configuration.

Belden Provize Planner and Explorer

Belden Provize is a easy to install easy to configure network managing software. Include in the Provize suite there is Provize Exloprer and Provize Planner. PROVIZE Explorer simplifies device commissioning. The software detects devices that have not yet been commissioned and supports configuration of management IP addresses and credentials. Part of Belden's PROVIZE Network Planning and Management Suite, PROVIZE Planner simplifies network planning and configuration. PROVIZE Planner allows users to design networks before buying equipment, saving time and resources.

Network planning includes many different types of tasks, such as creating topologies and bills of materials. These different tasks currently require separate completion and regular harmonization of the documents. PROVIZE Planner supports the planning process with an integrated and useroriented interface. The drag-and-drop interface allows users to design network configurations based on the networks' intended purposes. Built-in logic verifies the validity of network configurations, ensuring the network can work as designed. Plus, PROVIZE Planner automatically generates a complete bills of materials, informing users of equipment they need to purchase prior to installation – saving time and lowering implementation costs.

As digitization and automation expand, the number of devices on networks grows. Belden PROVIZE Explorer streamlines device commissioning by setting management IP addresses and credentials via an easy-to-use interface, saving time and reducing effort. As part of Belden's PROVIZE Suite, PROVIZE Explorer integrates seamlessly with network planning and management.

Your Benefits

- Web-based graphical interface simplifies the network planning process.
- Built-in logic ensures networks can function as designed.
- Allows intuitive commissioning of Hirschmann devices.
- Enables instant detection of any not yet commissioned devices.
- Grants easy access to device interfaces.
- Seamlessly integrated into the PROVIZE Suite.

Markets

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



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 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), -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](#)



Cat6A RJ45 Copper shielded patchcord 4P26AWG

A	7	J	S	J	S	A	6	0	2	1	0	6	0	1	0	0
---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Cable Jacket Material

A6021 = LSZH Jacket
A6023 = PVC Jacket
A6027 = PU Jacket
A6028 = TPE Jacket

Cable Jacket Color

01 = Brown - Pantone 1605C or similar
02 = Red - Pantone 193C or similar
03 = Orange - RAL 2003 or similar
04 = Yellow - RAL 1021 or similar
05 = Green - RAL 6024 or similar
06 = Blue - RAL 5015 or similar
07 = Purple - RAL 4005 or similar
08 = Gray - RAL 7037 or similar
09 = White - RAL 9003 or similar
00 = Black - RAL 9005 or similar

Cable Length (length between 0.5 to 55 meters)

0050 = 0.5m cable length
0100 = 1m cable length
1000 = 10m cable length
5500 = 55m cable length



- Flame Retardant: FT2/IEC 60332-1, Horizontal Flame, IEC 60332-3A
- Environment Characteristics: Oil resistance (EN 60811-404)
- Protection: IP20
- Operating Temp: -25°C to +70°C

Cat5e M12/RJ45 Copper shielded cordset 2P24AWG

E	5	M	S	J	S	E	6	0	2	5	0	1	0	0
---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Connector 1

MS = M12 D code male straight connector
JS = RJ45 male straight connector

Connector 2

MS = M12 D code male straight connector
JS = RJ45 male straight connector

Cable

E6025 = Ethernet/IP, Cat5e cable, 2P24AWG*7, SF/UTP, PU, Teal RAL5021
E9054 = Ethernet/IP, Cat5e cable, 2P24AWG*7, SF/UTP, PVC, Teal RAL5021

Cable Length (length between 0.5 to 90 meters)

0050 = 0.5m cable length 0100 = 1m cable length
1000 = 10m cable length 9000 = 90m cable length

- Flame Retardant: FT2/IEC 60332-1, Horizontal Flame
- Environment Characteristics: Oil resistance (EN 60811-404)
- Protection: M12 side IP67, RJ45 side IP20
- Operating Temp: -25°C to +70°C
- Drag Chain: 1 million cycles





Cat5e RJ45 Copper shielded patchcord 4P26AWG

A	5	J	S	J	S	A	6	0	1	4	0	6	0	1	0	0
---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Cable Jacket Material

A6014 = LSZH Jacket
A6016 = PVC Jacket
A6038 = PU Jacket
A6039 = TPE Jacket

Cable Jacket Color

01 = Brown - Pantone 1605C or similar
02 = Red - Pantone 193C or similar
03 = Orange - RAL 2003 or similar
04 = Yellow - RAL 1021 or similar
05 = Green - RAL 6024 or similar
06 = Blue - RAL 5015 or similar
07 = Purple - RAL 4005 or similar
08 = Gray - RAL 7037 or similar
09 = White - RAL 9003 or similar
00 = Black - RAL 9005 or similar

Cable Length (length between 0.5 to 55 meters)

0050 = 0.5m cable length
0100 = 1m cable length
1000 = 10m cable length
5500 = 55m cable length



- Flame Retardant: FT2/IEC 60332-1, Horizontal Flame, IEC 60332-3A
- Environment Characteristics: Oil resistance (EN 60811-404)
- Protection: IP20
- Operating Temp: -25°C to +70°C



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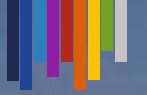




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