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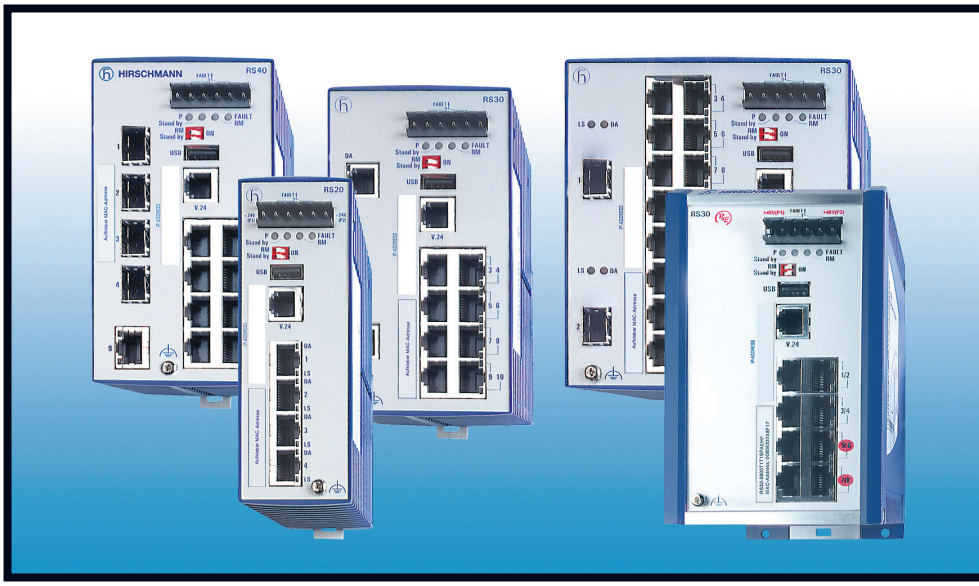
Product Bulletin

PB 1083HE

OpenRail family from Hirschmann™

The customization of Hirschmann OpenRail managed industrial Ethernet switches is now possible with our online web configurator. The configurator makes it easy to develop tailored solutions for many application scenarios.



The features of these compact OpenRail switches can be configured in a step-by-step process – from selecting the number of ports with Fast Ethernet or Gigabit data rates, to software functionality. At the end of the process, an order code is generated, which contains all the necessary configuration information.

- With the web configurator, OpenRail boasts an online ordering system that can cope with almost any requirement.
- It takes only a few mouse clicks to configure the optimum switch from the thousands of potential versions available.
- With OpenRail, you only pay for the features your individual application actually needs.

Nowadays, efficient production processes are more important than ever in generating strong added value. "Off-the-shelf" products can never be a perfect fit for all customers. That is why Hirschmann developed a web configurator for its OpenRail Ethernet switches in the RS20, RS30 and RS40 series. The online configurator facilitates the configuration of products to exact customer specifications. Fast Ethernet and Gigabit ports can be individually defined and the customer can select the desired operating temperature range, power supply and industry-specific approvals. There is also a choice of software versions, each containing a range of different management functions and providing support for fast redundancy protocols, security mechanisms and standards such as PROFINET and EtherNet/IP.

Applications

In the automation area, the demands made on data communication via Ethernet differ widely from application to application. They range from simple installations to complex, high-performance networks with comprehensive management functions and extremely high failure tolerance. The OpenRail is the perfect switch for every application scenario and is ideal for machine and plant engineering where Ethernet is becoming the communications protocol.

In addition, the OpenRail family has the required certifications for power transmission and distribution, oil and gas and transportation applications.

Customer benefits

The managed Industrial Ethernet switches in the OpenRail family provide an optimum degree of flexibility. Using the web configurator, you can exploit our range of several thousand versions to put together the ideal switch variant for your purposes – even if you only need one of a particular configuration. Features such as number of ports, management functionality or industry-specific approvals can be conveniently selected from drop-down lists. Once we have received your order, your customized switches will be immediately manufactured. We will then deliver them to you at the same price and delivery conditions as for our standard devices.

A new product to serve your needs.
Be certain.

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OpenRail family from Hirschmann™

OpenRail offers you customized switches for the same price as standard devices.

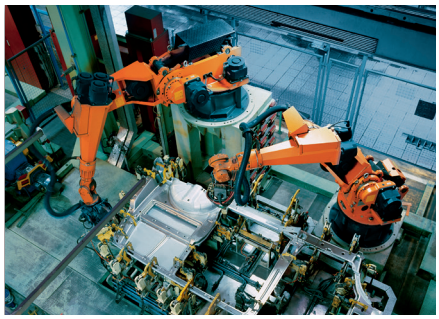
The managed Industrial Ethernet switches in the OpenRail family can be individually customized using the web configurator, thus maximizing their cost effectiveness. All switch versions can withstand shocks and vibrations, magnetic fields and electrostatic discharges.

They are also equipped with a redundant 24/48V power supply and a compact DIN rail casing for space-saving installation. The operating temperature range is -40°C to +70°C or 0°C to +60°C, with a number of Fast Ethernet ports ranging from 4 to 26. Up to 9 Gigabit ports are also possible.

Last but not least, comprehensive management functions, redundancy protocols and security mechanisms are available, plus industry-specific certifications for use in potentially explosive environments (cUL 1604 C1D2, ATEX), in transformer substations (IEC 61850-3, IEEE 1613), in the railways sector (EN 50121-4), or on board ships (e.g. GL and ABS).

Benefits at a glance

- Customized switches with an outstanding price-performance ratio
- Fast and simple selection of features using the web configurator and drop-down lists
- Versions with 4 to 26 Fast Ethernet ports (10/100 BASE-TX) or 9 Gigabit Ethernet ports (1000 BASE-FX)
- PROFINET and EtherNet/IP variants
- Convenient configuration and diagnostics thanks to comprehensive management functions (serial interface, web interface, SNMP V1/V2, HiVision File Transfer, SW, HTTP/TFTP, LLDP-MED)
- High network availability owing to fast redundancy protocols (HIPER Ring, MRP, MSTP, RSTP-IEEE802.1D-2004, MRP and RSTP in parallel, Link Aggregation
- High data security thanks to numerous security mechanisms (IP and MAC Port Security, SNMP V3, SSHv2, Authentication (IEEE802.1x), 802.1x Multi Client Authentication, Guest VLAN and Unauthenticated VLAN, Port based Radius VLAN Assignment, Login Banner)
- Broad range of application scenarios due to industry-specific certifications
- Extended operating temperature range from 40°C to +70°C
- High resistance to shocks, vibrations and EMC
- Redundant 24/48V power supply
- Compact DIN rail casing for space-saving installation
- Can be ideally combined with switches and Industrial HiVision network management software from Hirschmann, Ethernet cable from Belden, and devices in the Lumberg Automation and GarrettCom product programs



Technical Information

Product Description			
Type	**RS20xx/RS22xx**	**RS30xx/RS32xx**	**RS40xx**
Description	Managed Industrial Ethernet Switch Ethernet (10 Mbit/s) and Fast-Ethernet (100 Mbit/s) optional Power over Ethernet (PoE)	Managed Industrial Ethernet Switch Ethernet (10 Mbit/s) and Fast-Ethernet (100 Mbit/s) and Gigabit-Ethernet (1000 Mbit/s) optional Power over Ethernet (PoE)	Managed Industrial Ethernet Switch Ethernet (10 Mbit/s) and Fast-Ethernet (100 Mbit/s) and Gigabit-Ethernet (1000 Mbit/s)
Software	Layer 2 Enhanced or professional	Layer 2 Enhanced or professional	Layer 2 Enhanced or professional
Port type and Quantity	4 to 25	8 to 26	9
Power Requirements			
Operating Voltage	12 - 48 VDC and 24 VAC (redundant)		
Ambient Conditions			
Operating Temperature	0°C to +60°C, -40°C to +70°C, or -40°C to +70°C (optional Conformal Coating)		
Mechanical Construction			
Mounting	DIN Rail		
Protection Class	IP20		
Approvals			
Safety of Industrial Control Equipment	cUL508		
Hazardous Locations*	cUL 1604 Class1 Div 2, cULus ISA12.12.01 (Class1 Div 2), ATEX 100a, Zone 2		
Ship*	GL, ABS (RS30), BV (RS30), DNV, KR (RS30), LR (RS30), RINA		
Transportation*	NEMA TS2		
Railway*	EN 50121-4		
Substation*	IEC 61850-3, IEEE 1613		
Software Professional (P)			
Management	Serial interface, web-interface, SNMP V1/V2, HiVision file transfer SW HTTP/TFTP, LLDP-MED		
Diagnostics	LEDs, log-file, syslog, relay contact, RMON, port mirroring 1:1 and n:1, egress/ingress traffic configurable, topology discovery 802.1AB, cable tester (TX), address conflict detection, network error detection, SFP diagnostic [temperature, optical input and output power (µW and dBm)], Trap for configuration saving and changing, duplex mismatch detection, disable learning, Port Monitor		
Configuration	Comand line interface (CLI), TELNET, BootP, DHCP, DHCP option 82, HIDiscovery, easy device exchange with auto-configuration adapter ACA21-USB (automatic software and/or configuration upload), automatic script load from ACA21, integrated DHCP server per port, DHCP relay, automatic invalid configuration undo, Offline Configuration, SFP Whitelist, ARC automatic ring configuration (MRP), automatic port shutdown (link flapping), configuration signature (water marking), overload detection		
Security	Port Security (IP and MAC) with multiple addresses (MAC 50 per port), SNMP V3, SSHv2, Authentication (IEEE802.1x), 802.1x Multi Client Authentication, Guest VLAN and Unauthenticated VLAN, Port based Radius VLAN assignment, Login Banner		
Redundancy Functions	HIPER-Ring, MRP, MSTP, RSTP - IEEE802.1D-2004, MRP and RSTP in parallel, link aggregation		
Industrial Profiles	EtherNet/IP and PROFINET (2.2 PDEV, GSDML Stand-alone generator, automatic device exchange) profiles included, configuration and diagnostic via automation software tools like e.g. STEP7, or Control Logix		
Filter	QoS 4 classes, priorisation (IEEE 802.1D/p), VLAN (IEEE 802.1Q), Voice VLAN, shared VLAN learning, Q-in-Q double VLAN tagging, multicast IGMP v1/v2/v3 (snooping/querier), multicast detection unknown multicast, broadcast-, unicast-, multicast limiter, fast aging, GMRP IEEE 802.1D		
Time Synchronization	SNTP Client/Server, PTP / IEEE 1588		
Flow Control	Flow Control 802.3x, Port Priority 802.1D/p, Priority (TOS/DIFFSERV), Prio (MAC/IP), Prio Mapping (TOS Layer2), Traffic Shaping (Unicast, Multicast, Broadcast) Ingress / Egress		

NOTE: These are the prominent technical specifications. For complete technical specifications visit: www.hirschmann. com
* Depending on the selected variant

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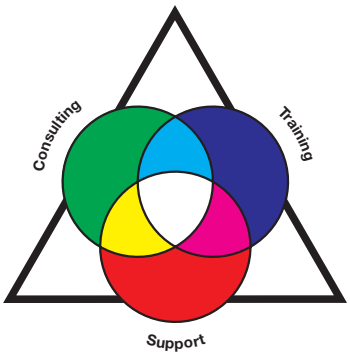

As the complexity of communication and connectivity solutions has increased, so have the requirements for design, implementation and maintenance of these solutions. For users, acquiring and verifying the latest expert knowledge play a decisive role in this. As a reliable partner for end-to-end solutions, Belden offers expert consulting, design, technical support, as well as technology and product training courses from a single source: Belden Competence Center. In addition, we offer you the right qualification for every area of expertise through the world's first certification program for industrial networks. Up-to-date manufacturer's expertise, an international service network and access to external specialists guarantee you the best possible support for products from Belden®, GarrettCom®, Hirschmann™ and Lumberg Automation™. Irrespective of the technology you use, you can rely on our full support – from the implementation to the optimization of every aspect of daily operations.

Always Stay Ahead with Belden

In a highly competitive environment, it is crucial to have reliable partners who are able to add value to your business. When it comes to signal transmissions, Belden is the number one solutions provider. We understand your business and want to know your specific challenges and targets to see how effective signal transmission solutions can push you ahead of the competition. By combining the strengths of our four leading brands, Belden®, GarrettCom®, Hirschmann™ and Lumberg Automation™, we are able to offer the solution you need. Today it may be a single cable, a switch or a connector, thus solving a specific issue; tomorrow it can be a complex range of integrated applications, systems and solutions.

About Belden

**Belden Inc., a global leader in high quality, end-to-end signal transmission solutions,
delivers a comprehensive product portfolio designed to meet the mission-critical network infrastructure needs of industrial, enterprise and broadcast markets. With innovative solutions targeted at reliable and secure transmission of rapidly growing amounts of data, audio and video needed for today's applications, Belden is at the center of the global transformation to a connected world. Founded in 1902, the company is headquartered in St. Louis, USA, and has manufacturing capabilities in North and South America, Europe and Asia.**

For more information, visit us at www.beldensolutions.com and follow us on Twitter@BeldenInc.

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