



# HIRSCHMANN

A BELDEN BRAND

## New Product Bulletin

NP 1036HE

### Hirschmann™ RSP Switches

High-availability network devices that can withstand the toughest conditions and provide reliable protection against network-borne attacks.



**With Hirschmann™ RSP Switches, Which Support the New IEC-Standard Redundancy Protocols (PRP, HSR), Networks Can Now be Built for the First Time With Genuinely Uninterrupted Data Communication.**

- Switchover times of 0 ms guarantee high productivity for your machines and systems
- Extensive security functions guarantee all-round protection against network-borne attacks and operator errors
- Precise synchronization enables applications to comply with stringent real-time requirements

The new RSP switches from Hirschmann™, with robust hardware and a powerful operating system, are able to withstand extremely harsh environmental conditions. For the first time, the integration of new redundancy protocols allows uninterrupted data communication. These new techniques, PRP (Parallel Redundancy Protocol) and HSR (High-availability Seamless Redundancy), are based on the international IEC62439 standard and therefore guarantee future security and interoperability. Precision time synchronization in accordance with IEEE 1588v2, synchronizes sensors, drives and measuring equipment. Gigabit Ethernet provides for a fast connection to the backbone, while connections to terminal equipment use 100 BASE-TX – either alone or in combination with 100 BASE-FX.

### Applications

The RSP switches from Hirschmann™ are optimized for the type of data communication used in the electricity supply industry, because using Ethernet to link the field-level transformer stations of a power supply grid calls for special network equipment which – such as the RSP switches from Hirschmann™ – can guarantee uninterrupted communication in the systems under even the harshest conditions. This is the only way of ensuring that end customers receive an uninterrupted power supply.

The RSP switches from Hirschmann™ can also be used in many other areas. They offer optimum solutions wherever uninterrupted data communication is of the essence, for example in mechanical engineering, production or security applications.

### Benefits

The RSP switches from Hirschmann™ are the first to allow uninterrupted data communication, thus ensuring continuous access to machines and systems, greatly increasing their productivity and hence also their profitability. The switches feature comprehensive security functions to provide all-round protection against network attacks. Since they also support precise synchronization, they can be used to safely network even applications that are subject to stringent real-time requirements.

**A new product to  
serve your needs.  
Be certain**



## Hirschmann™ RSP Switches

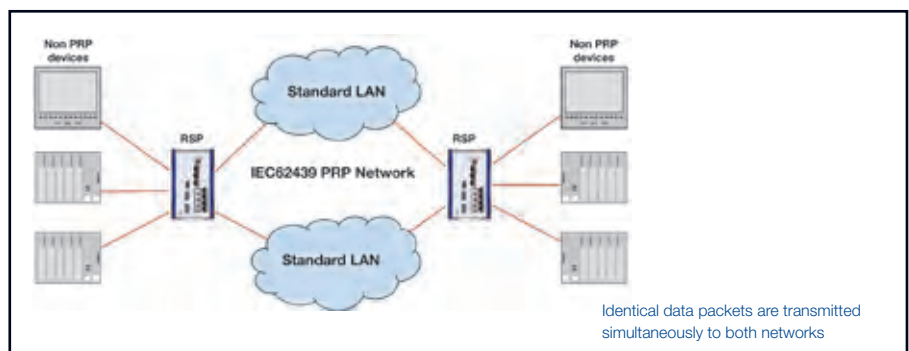
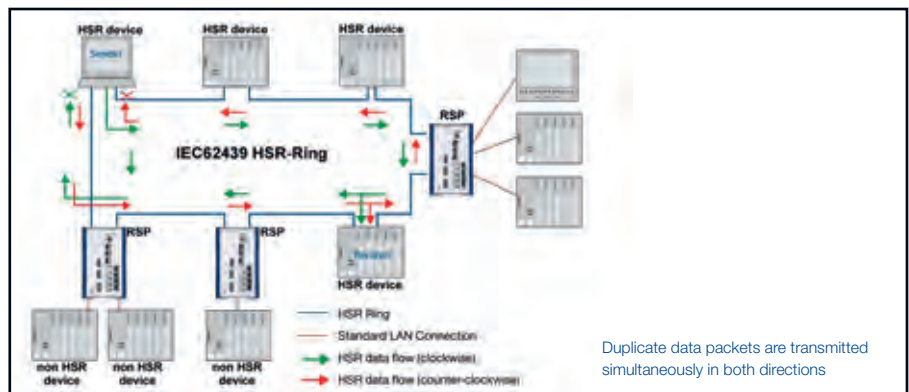


RSP switches from Hirschmann™ offer eleven ports, three of which can be equipped with SFP transceivers that support Fast (100 BASE-FX) or – optionally – Gigabit-Ethernet (100/1000 BASE-FX). The remaining ports can be used either for 100 BASE-TX or as a combination of four SFP transceivers and four TX ports. These switches are also remarkable for their extensive management and redundancy methods, as well as enhanced security mechanisms. In addition is a version available that supports precise synchronization compliant with IEEE 1588v2, plus PRP (Parallel Redundancy Protocol) and HSR (High-availability Seamless Redundancy).

### The Advantages at a Glance

- Extensive range of redundancy methods: PRP, HSR, PRP/HSR Red Box, MRP, Fast MRP, RSTP
- Precise synchronization compliant with IEEE 1588v2
- Enhanced security mechanisms: authentication, radius, role based access, port security, SSHv2, HTTPS and SFTP, plus others currently in preparation.
- Fast device replacement, comprehensive logging and storage of all configuration data, plus operating software updates via SD card
- High level of vibration resistance
- Broad immunity to electrostatic discharges and magnetic fields
- Temperature range from -40°C to +70°C
- Power supply 24/36/48 V DC or 60/120/250 V DC and 110/230 V AC
- Strong and compact metal housing

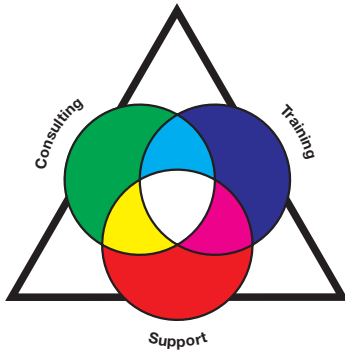
0 ms switchover time – the RSP switches from Hirschmann™ support the redundancy protocols PRP and HSR.





## Technical Information

Product Description				
Type	RSP20-xx	RSP30-xx	RSP25-xx	RSP35-xx
Description	Managed, Industrial Switch DIN Rail, fanless design			
Port Type and Quantity	Ports in total: 11, 3xFE SFP slots, 4xFE SFP/4x10/100 TX ports, or 8x10/100 TX ports	Ports in total: 11, 3xFE/GE SFP slots, 4xFE SFP/4x10/100 TX ports, or 8x10/100 TX ports	Ports in total: 11, 3xFE SFP slots, 4xFE SFP/4x10/100 TX ports, or 8x10/100 TX ports	Ports in total: 11, 3xFE/GE SFP slots, 4xFE SFP/4x10/100 TX ports, or 8x10/100 TX ports
Additional Interfaces				
V.24 Interface	1 x RJ11 socket			
SD Card Slot	1 x to connect auto-configuration adapter ACA31 (SD-card)			
Gigabit Ethernet Network Size				
Multimode Fiber (MM)	50/125 $\mu\text{m}$ , 0 – 550 m, 7.5 dB link budget; 62.5/125 $\mu\text{m}$ 0 – 275 m, 7.5 dB link budget (with M-SFP-SX/LC)			
Single Mode Fiber (SM) 9/125 $\mu\text{m}$	0 – 20 km, 11 dB link budget (with M-SFP-LX/LC); 14 – 42 km, 5 – 20 dB link budget (with M-SFP-LX+/LC)			
Single Mode Fiber (LH) 9/125 $\mu\text{m}$	24 – 72 km, 6 – 22 dB link budget (with M-SFP-LH/LC); 70 – 128 km, 15 – 30 dB link budget (with M-SFP-LH+/LC)			
Fast Ethernet Network Size				
Twisted Pair	0 – 100 m			
Multimode Fiber (MM)	50/125 $\mu\text{m}$ , 0 – 5000 m, 8 dB link budget; 62.5/125 $\mu\text{m}$ , 0 – 4000 m, 11 dB link budget (with M-Fast SFP-MM/LC)			
Single Mode Fiber (SM) 9/125 $\mu\text{m}$	0 – 25 km, 13 dB link budget (with M-Fast SFP-SM/LC); 25 – 65 km, 10 – 29 dB link budget (with M-Fast SFP-SM+/LC)			
Single Mode Fiber (LH) 9/125 $\mu\text{m}$	40 – 104 km, 10 – 29 dB link budget (with M-Fast SFP-LH/LC)			
Network Size – Cascadability				
Line-/Star Topology	any			
Ring Structure	>200 Switches			
Fault Recovery Time	0 ms with PRP or HSR			
Power Requirements				
Operating Voltage	24/36/48 V DC redundant, or 60/120/250 V DC and 110/230 V AC			
Software				
Management	V.24, Telnet, SSHv2, HTTP, HTTPS, TFTP, SFTP, SNMP v1/v2/v3, Traps			
Diagnostics	LED, persistent logging, syslog, signal contact, device status indication, port mirroring N:1, RMON (1,2,3,9), TCPDump, LLDP, copper cable test, SFP management (temperature, optical input and output power), switch dump, configuration check dialog, system information, self tests on cold start, system monitor 1			
Configuration	Command line interface (CLI), web based management, full featured MIB support, BOOTP/DHCP client with auto configuration, HiDiscovery, auto-configuration adapter ACA31 (SD card), Automatic configuration undo (roll-back), text based configuration file, CLI scripting			
Security	MAC based port security, Authentication (IEEE802.1x), Guest/unauthenticated VLAN, Radius client, Restricted management access, Local user accounts, different privilege levels, management authentication via RADIUS, account locking, configurable password policy, account locking, audit trail, configurable login attempts, HTTPS certificate management, CLI/SNMP logging			
Redundancy Functions	MRP, RSTP 802.1w, further protocols in preparation			
Enhanced Redundancy Functions	–	–	Fast MRP, PRP, HSR (pending)	Fast MRP, PRP, HSR (pending)
Filter	QoS (8 classes), CoS queue management, interface trust mode, TOS/DSCP prioritization, port priority (IEEE802.1D/p), VLAN (IEEE802.1Q), IGMP snooping/querier per VLAN (v1/v2/v3), unknown multicast filtering, independent VLAN learning, static unicast/multicast address entries, fast aging			
Time Synchronization	PTPv2 TC two-step, SNTP server and client, Buffered RTC			
Flow Control	Flow control (IEEE802.3X), egress interface shaping, ingress storm protection			
Miscellaneous	Port power down, cable crossing, dual image support, VLAN unaware mode, access to management restricted by VLAN			
Ambient Conditions				
Operating Temperature	0°C to 60°C or -40°C to +70°C, IEC 60068-2-2 Dry Heat Test +85°C, 16 Hours, optional conformal coating			
Relative Humidity (non-condensing)	10% to 95%			
Mechanical Construction				
Dimensions (W x H x D)	90 (98) x 164 x 120 mm (EEC)			
Weight	1.2 kg, (1.5 kg EEC)			
Protection Class	IP30			
Approvals				
Safety of Industrial Control Equipment	cUL 508 (pending)			
Substation	IEEE61850-3, IEEE1613			
Transportation	NEMA TS2 (pending), EN50121-4 (pending)			



## The Belden® Competence Center

Make sure you get an economical end-to-end solution for your network: In addition to its well-known products, Belden can also offer you a wide range of vendor-independent services. Whether it's consulting, training or support – at the Belden® Competence Center you can be certain of tailor-made service from a single supplier.

Whichever technology you use: our experts will support you all the way, from designing your network to optimizing the measures required in the operating phase. Up-to-date manufacturer's expertise, an international service network and fast access to external specialists guarantees you the best possible support. Bundle your individual service package today!

### 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 three leading brands, Belden®; 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.

We guarantee the superior performance of your mission-critical systems, even in the most demanding circumstances. If signal transmission is vital to your business, get in touch with the partner that delivers. Be certain. Belden.