


**HIRSCHMANN**

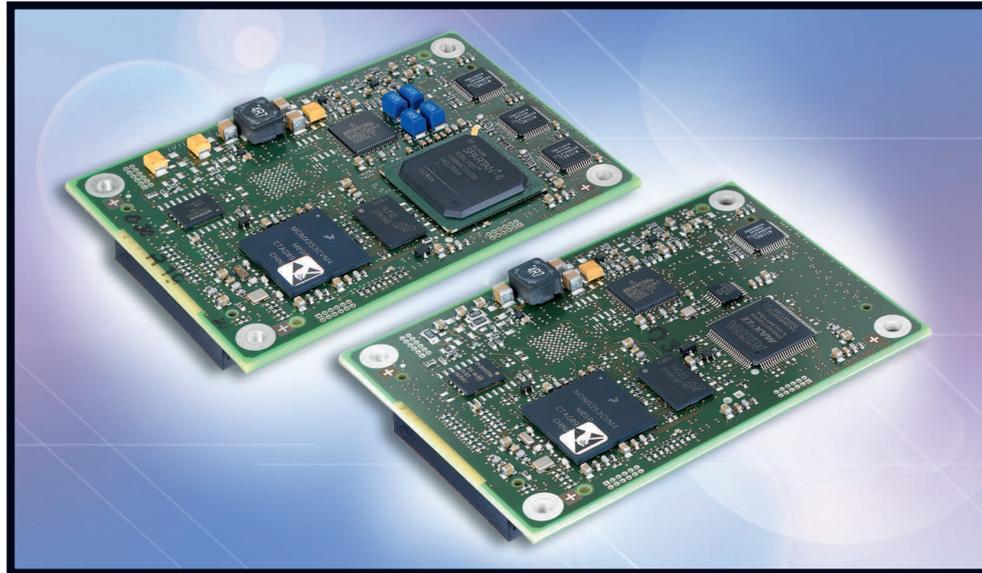
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## New Product Bulletin

**NP 1037HE**

### Hirschmann™ Embedded Ethernet EES20 and EES25 Switches

Cost-effective solution for integrating state-of-the-art switch technology in automation equipment



**The New Embedded Ethernet EES20 and EES25 Switches from Hirschmann™ Combine the Functional Scope of a Powerful Managed Switch With Interruption-free Redundancy Protocols and Precise Synchronization.**

- This module allows automation equipment to be extended to include state-of-the-art switch technology with very little effort
- The additional network functionality gives the equipment sustained competitive advantages
- Development process and time-to-market are significantly shortened thanks to Embedded Ethernet

The new Embedded Ethernet EES20 and EES25 switches from Hirschmann™ provide automation equipment that already has an Ethernet interface with the complete functional scope of a managed standalone switch. New standardized Redundancy Protocols facilitate uninterrupted data communication, or in other words switchover times of 0 ms. It also supports real-time applications as per IEEE 1588v2. Since all the functions can be updated via software update, the Embedded Ethernet switches from Hirschmann™ offer maximum flexibility and future security. Both versions are implemented as compact modules and are mounted directly on the main board of the automation equipment. An optional development kit permits fast and easy design-in.

#### Applications

The Embedded Ethernet EES20 and EES25 switches from Hirschmann™ can be used anywhere that requires automation equipment with additional switch functions, making them particularly suitable for use in mechanical and plant engineering. But they facilitate high-availability applications also in other areas, such as safety devices in transformer stations, remote terminal units in wind turbines or control equipment in trains.

#### Benefits

The Embedded Ethernet EES20 and EES25 switches from Hirschmann™ offer equipment manufacturers a fast and easy way of equipping their automation equipment with state-of-the-art switch technology. They offer additional network functionality, thus a competitive advantage. At the same time, the development process and time-to-market are significantly reduced since the manufacturers no longer need to concern themselves with the switch technology, but can instead concentrate on their core competencies.

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

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## Hirschmann™ Embedded Ethernet Switches EES20 and EES25

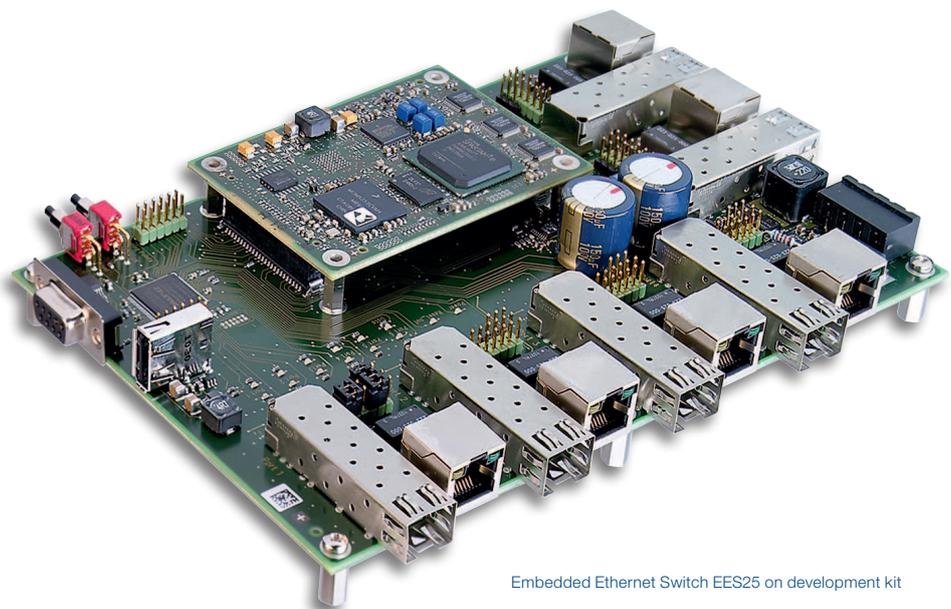
The Embedded Ethernet EES20 and EES25 switches each have six Fast Ethernet ports that can be configured for either 10/100 BASE TX or 100 BASE FX. They also offer extensive management and filter functions plus a variety of redundancy protocols and port security.

In addition, the EES25 supports precise synchronization as per IEEE 1588v2, plus PRP (Parallel Redundancy Protocol) and HSR (High-availability Seamless Redundancy Protocol), which guarantee uninterrupted data communication. Both versions can be integrated into the Hirschmann™ network management software Industrial HiVision.

Hirschmann™ Embedded Ethernet EES20 and EES25 switches offer Fast Ethernet and layer 2 functions.

### The Advantages at a Glance

- Six Fast Ethernet ports for 10/100 BASE-TX or 100 BASE-FX
- Management via web browser, SNMP, RMON, VLAN, Multicast, CLI
- Port and cyber security
- Redundancy protocols RSTP and MRP plus PRP (EES25), HSR pending
- Precise synchronization as per IEEE 1588v2 (EES25)
- Functional scope can be updated via software update
- Extended temperature range from -40°C to +85°C
- Compact construction (88 mm x 13 mm x 60 mm)
- Easy to install
- Power consumption 2.9 W / 4.6 W



Embedded Ethernet Switch EES25 on development kit



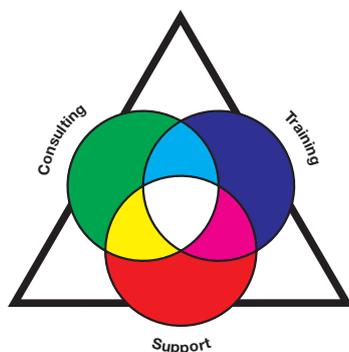
## Technical Information

Product Description			
Type: Embedded Ethernet Switch	EES20-0600UHIHSH2E	EES25-0600UHIHMH2E	EES25-0600UHIHPH2E
			
<b>Description</b>	Managed Fast Ethernet Switch nach IEEE 802.3, store-and-forward-switching		
<b>Port Type and Quantity</b>	6x Fast Ethernet ports, configurable as 100BaseTX or 100BaseFX, RX+/RX- and TX+/TX- signals per port		
<b>Order-No.</b>	942 050-001	942 050-002	942 050-003
More Interfaces			
<b>Control/Status</b>	RS232 (Konfiguration), SPI (Status), SNMP traps (Alarmer), SNMP		
<b>Time Synchronization</b>	–	PPS output (pulse-per-second), IRIG-B output, controlled by PTP ordinary clock	PPS output (pulse-per-second), IRIG-B output, controlled by PTP ordinary clock
<b>Host Interface</b>	2x50-pin male connectors		
Network			
<b>Line-/Star Topology</b>	any		
<b>Redundancy</b>	RSTP, Media Redundancy Protocol (MRP, IEC 62439-2), 200 ms recovery	RSTP, Media Redundancy Protocol (MRP, IEC 62439-2), 10 ms recovery	RSTP, Media Redundancy Protocol (MRP, IEC 62439-2), 200 ms recovery, Parallel Redundancy Protocol (PRP, IEC 62439-3) RedBox
Power Requirements			
<b>Operating Voltage</b>	+3.3 V DC +/- 5%		
<b>Power Consumption</b>	2.9 W	4.6 W	4.6 W
Software			
<b>Management</b>	Web interface, serial interface, SNMP v1/v2c/v3		
<b>Diagnostics</b>	RMON (groups 1, 2, 3, 9), log file, syslog, port mirroring, SNMP traps (alarms)		
<b>Configuration</b>	Command line interface (CLI), TELNET, DHCP, BootP, HiDiscovery, text based configuration file		
<b>Security</b>	Port security, 802.1x, ingress storm protection		
<b>Redundancy Functions</b>	RSTP, MRP	RSTP, MRP, Fast MRP	RSTP, MRP, PRP
<b>Filter</b>	4 QoS queues, IEEE 802.1Q VLAN support (16 VLANs simultaneously out of 4k VIDs), MAC multicasts: static multicast filters, IP multicasts: IGMP snooping, egress shaping, flow control		
<b>Time Synchronization</b>	PTPv2 (IEEE 1588-2008) transparent clock and ordinary clock	PTPv2 (IEEE 1588-2008) transparent clock and ordinary clock	PTPv2 (IEEE 1588-2008) transparent clock and ordinary clock
<b>Other Services</b>	TFTP, HTTPS, SFTP		
Mechanical Construction			
<b>Dimensions (WxHxD)</b>	88 mm x 13 mm x 60 mm		
<b>Weight</b>	35 g		
Ambient Conditions			
<b>Operating Temperature</b>	-40°C to +85°C		
<b>PCB Protection</b>	optional: conformal coating		
Accessories			
<b>Accessories to Order Separately</b>	EES development kit – Order-No. 942 049-001		



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## The Belden® Competence Center

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®, 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 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.