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Product Bulletin

PB00020AG

Hirschmann RED25 Switches from Belden

New family of entry-level redundancy switches 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 PRP, HSR, and DLR, the Hirschmann RED25 switches have comprehensive built-in security features. The switches are also customizable based on specific port needs or environmental factors, such as temperature range.

- **Maximum network uptime** – interruption-free data communication supported by various redundancy protocols
- **Flexible, versatile design** – easy customization through two port configurations, various security features and field-exchangeable fiber modules
- **Cost effective** ideal for entry-level industrial network needs and economical installations, including retrofits

The RED25 family of switches offers maximum flexibility and a future-proof network design. This is an affordable solution for industrial network engineers, system integrators and machine builders working on entry-level applications.

Applications

RED25 is an ideal choice for those who need a Fast Ethernet, entry-level redundancy switch designed specifically for operation in extreme environmental conditions.

The features offered with these switches are particularly suited for use in industrial automation applications that require cost-effective, high-end redundancy topologies. RED25 switches are a great fit for automotive, manufacturing and machine building industries.

Other applications in which the RED25 switches can also be used include consumer packaged goods and water and wastewater treatment facilities.

Your Benefits

Permanent access to systems and machines is an absolute must for profitable business systems. The RED25 family provides maximum productivity and network uptime. This value stems from interruption-free data communications based on parallel redundancy protocol (PRP) and high-availability seamless redundancy (HSR). 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 designed to handle high ambient temperatures and meet precise time synchronization requirements.

A new product to serve your needs.
Be certain.

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RED25 Redundancy Switch

Based on Hirschmann Operating System (HiOS) software, RED25 supports several redundancy technologies, while offering a comprehensive range of security features.

This Fast Ethernet (FE) switch is offered in two, four-port versions:

- Four FE TX ports
- Two FE TX ports, plus two FE small form-factor pluggable (SFP) ports

The SFP-based fiber support enables a flexible network structure by allowing to change fiber ports in the field. A comprehensive set of security features also offers all-around network protection.

The RED25 switches guarantee a reliable network of applications with rigorous real-time requirements in accordance with IEEE 1588 v2. Further features include an extended operating temperature range from -40 °C to +70 °C, broad immunity to electrostatic discharges and high-vibration resistance.

Cost-effective, customizable solution for industrial redundancy and security needs.

Benefits at a Glance

- Interruption-free data communications thanks to the redundancy technologies PRP and HSR, fast recovery with DLR, RSTP and MRP
- Two FE port types available (4 x TX and 2 x TX/2 x SFP)
- Allows for connection to existing networks SFP modules to enable flexibility for in-the-field updates
- Comprehensive security mechanisms provide all-around network protection
- Broad immunity to electrostatic discharges, plus high-vibration resistance
- Small form-factor redundancy box (RedBox)
- Supports distances up to 100 kilometers
- HiOS Layer 2 – Standard software
- 24 V power supply
- Device replacement with auto-configuration adapter ACA22-USB
- Operating temperature range from -40 °C to +70 °C (standard model: 0 °C to +60 °C)

Technical Information

Product Description	
Type	**RED25-xx**
Description	Managed, Industrial Switch DIN Rail, fanless Design
Port Type and Quantity	Ports in total: 4, 4 x 10/100 TX, or 2 x 10/100 TX/2 x FE SFP
Additional Interfaces	
V.24 Interface	1x RJ11 socket
USB	1x to connect auto-configuration adapter ACA22 USB
Fast ETHERNET Network Size	
Twisted Pair	0 – 100 m
Multimode Fiber (MM) 50/125 µm	50/125 µm, 0 – 5000 m, 8 dB link budget; 62.5/125 µm, 0 – 4000 m, 11 dB link budget (with M-Fast SFP-MM/LC)
Singlemode Fiber (SM) 9/125 µm	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)
Singlemode Fiber (LH) 9/125 µm	40 – 104 km, 10 – 29 dB link budget (with M-Fast SFP-LH/LC)
Network Size – Cascadibility	
Line -/Star Topology	any
Ring Structure	>200 Switches
Fault Recovery Time	0 ms with PRP or HSR
Power Requirements	
Operating Voltage	12 – 48 V DC redundant, or 24 V AC
Software	
Management	Serial interface V.24, web-interface, Telnet, SSHv2, HTTP, HTTPS, TFTP, SFTP, SCP, SNMP v1/v2/v3, Traps, LLDP-MED, SSH client
Diagnostics	LED, persistent logging, syslog, signal contact, device status indication, port mirroring N:1, RMON, LLDP, SFP management, configuration check dialog, system information, Management Address Conflict Detection, Copper cable test, Port Monitor, duplex mismatch detection, snapshot configuration feature
Configuration	Command line interface (CLI), WEB based management, BOOTP/DHCP client with auto configuration, DHCP server per port and pool per VLAN, HiDiscovery, auto-configuration adapter ACA31 (SD card), Automatic configuration undo (roll-back), text based configuration file, CLI scripting, Telnet
Security	MAC based port security, Authentication (IEEE 802.1x), Radius client, RADIUS VLAN assignment, Guest/unauthenticated VLAN, Restricted management access, Local user accounts, different privilege levels, management authentication via RADIUS, configurable password policy and login attempts, account locking, audit trail, HTTPS certificate management, CLI/SNMP logging, DoS prevention (e.g. TCP SYN&FIN, UPD source = destination port, TCP fragment), Integrated Authentication Server (IAS)
Redundancy Functions	MRP, RSTP 802.1D-2004, Link Aggregation (2 LAG), Link backup, Fast MRP, PRP (Parallel Redundancy Protocol), HSR (High Available Seamless Ring), DLR (Device Level Ring) pending
Filter	QoS (4 classes), CoS queue management, interface trust mode, TOS/DSCP prioritization, port priority (IEEE 802.1D/p), VLAN (IEEE 802.1Q), Voice VLAN, IGMP snooping/querier per VLAN (v1/v2/v3), unkown multicast filtering, independent VLAN learning, static unicast/multicast address entries, fast aging, MVRP (Multiple VLAN Registration Protocol), MMRP (Multiple MAC Registration Protocol), MRP (Multiple Registration Protocol)
Industrial Profiles	EtherNet/IP,PROFINET and Modbus TCP profiles, configuration and diagnostic via automation software tools like e.g. STEP7, or Control Logix IEC 61850 protocol (MMS Server, Switch Model)
Time Synchronization	PTPv2 TC two-step, SNTP server and client, Buffered RTC (real time clock)
Flow Control	Flow control (IEEE 802.3X), egress interface shaping, ingress storm protection
Miscellaneous	Port power down, cable crossing, VLAN unaware mode, access to management restricted by VLAN
Ambient Conditions	
Operating Temperature	0 °C to +60 °C or -40 °C to +70 °C, optional conformal coating
Relative Humidity (non-condensing)	10% to 95%
Mechanical Construction	
Dimensions (W x H x D)	46 x 130 x 105 mm
Weight	320 g
Protection Class	IP20
Approvals	
Safety of Industrial Control Equipment	EN 60950, UL 61010-1/-2-210 (pending)

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

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RED25 Redundancy Switch Configurations

Design
RED25 = Redundancy Switch

Number of Fast Ethernet Ports
04 = 4 Fast Ethernet TX Ports

Number of Gigabit Ethernet Ports
00 = not supported

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

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

Temperature Range
S = 0 °C to + 60 °C
T = – 40 °C to + 70 °C
E = – 40 °C to + 70 °C Conformal Coating

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

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

Pre-Configuration
HM = Fast MRP
HP = PRP
HH = HSR
HD = DLR

Software Configuration
E = Standard

Software Level
2S = HiOS Layer 2 Standard

Software Version
04.1. = Software Version 04.1.
XX.X = Current Software Release

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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 No. 1 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 five leading brands, Belden, GarrettCom, Hirschmann, Lumberg Automation and Tofino Security, 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.