



# HIRSCHMANN

A **BELDEN** BRAND

## 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.**



# HIRSCHMANN

A BELDEN BRAND

## 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 – Cascadability           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 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, UDP 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), unknown 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 conformational 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)                                                                                                                                                                                                                                                                                                                                                                                                                                                                |

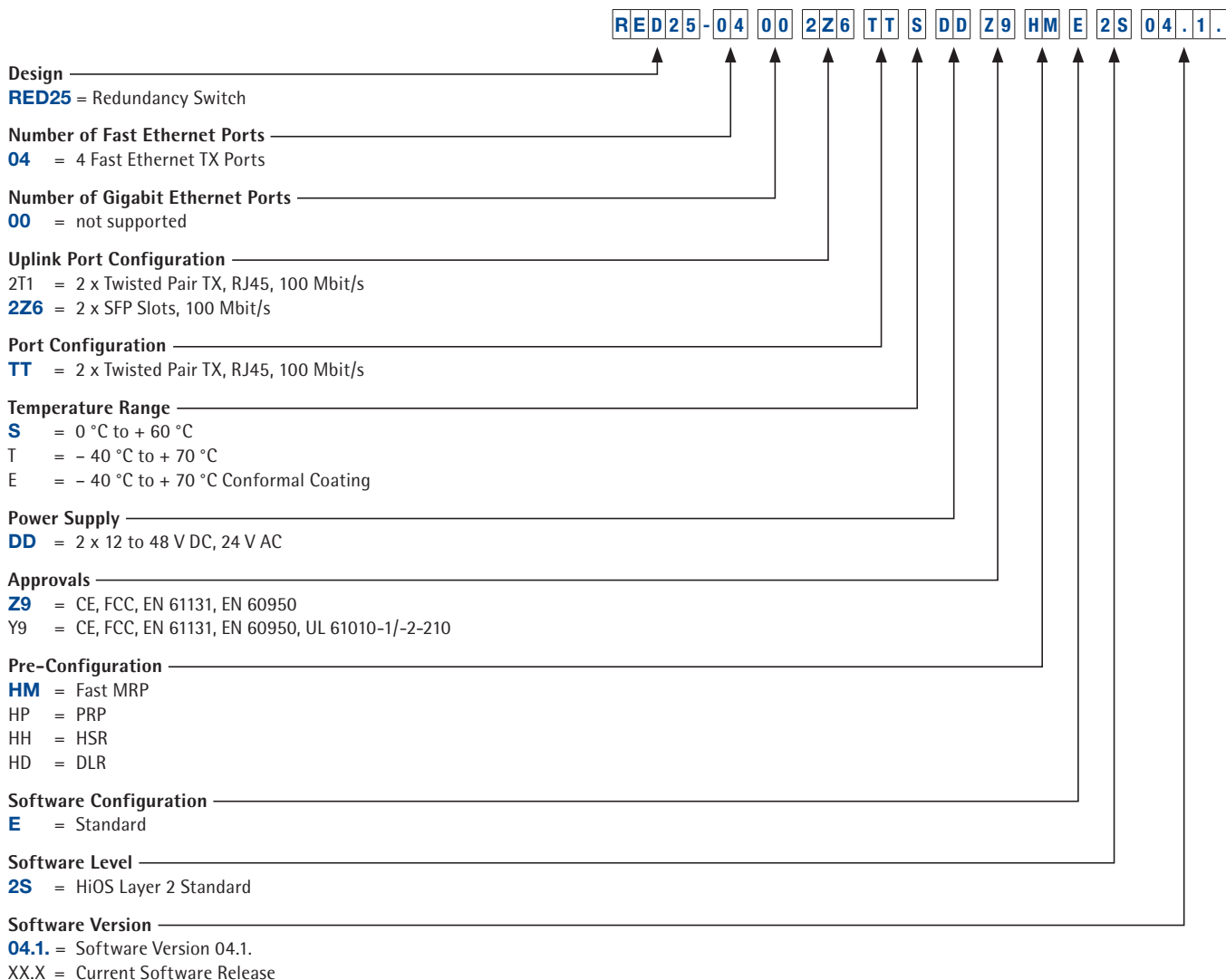
NOTE: These are the prominent technical specifications. For complete technical specifications visit: [www.hirschmann.com](http://www.hirschmann.com)



# HIRSCHMANN

A BELDEN BRAND

## RED25 Redundancy Switch Configurations



### 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 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.

*Belden, Belden Sending All The Right Signals, Hirschmann, GarrettCom, Tofino Security and the Belden logo are trademarks or registered trademarks of Belden Inc. or its affiliated companies in the United States and other jurisdictions. Belden and other parties may also have trademark rights in other terms used herein.*

Phone: **1.800.BELDEN.1**

[www.hirschmann.com](http://www.hirschmann.com)

©Copyright 2015, Belden Inc.

REDUNDANCY-SWITCH-RED25\_PB00020\_INIT\_HIR\_0315\_A\_AG