Hirschmann Rail Data Diode

Unidirectional Network Appliance

Hirschmann's Rail Data Diode secures mission-critical Ethernet networks through guaranteed one-way data traffic, while also transferring data out of the secure part of the system in a highly controlled, deterministic manner.

+ **Reliably protect networks** from external cyber threats through singular data flow

+ **Securely transfer Ethernet data** to the public internet without putting the system at risk

+ **Easily explain product functionality** for simpler governmental approval processes

Key Features

- Secure Ethernet ports that are safe from vulnerabilities
- Quick data transmission speed for timely monitoring
- Hardware-based device for easy-to-understand operation
- Standard RJ45 and vibration-proof M12 connectors
- Redundant voltage supply for greater availability, including 24 VDC, 110 VDC and 110/230 VAC
- Conformal coating for protection from harsh elements
- Industry-approved for use onboard trains and along railway tracks

The Hirschmann Rail Data Diode enables constant Ethernet data transfer, while eliminating access to paths into the secure part of the network, making it impossible for intruders to enter.

Be certain.
Belden.

Your Benefits

Complete Protection of Mission-Critical Applications

In the age of digital information, industrial companies rely more than ever on network access through the public internet to collect data and monitor performance. Eliminating related vulnerabilities – namely cyber threats – is mandatory. Hirschmann's Rail Data Diode releases one-way data transmissions, blocking potentially infected incoming traffic, while simultaneously offering monitoring capabilities.

The operating environment for industrial products is often harsh and leaves equipment exposed to corrosive and harmful elements. The data diode is protected from its severe operating environment with a metal housing, conformal coating, RJ45 and vibration-proof M12 ports, limiting wear-and-tear for a longer lifecycle. The product also has routers with seven ports on either side. A redundant power supply increases the availability of the one-way data path.

The Hirschmann Rail Data Diode is a hardware-based product that physically interrupts an Ethernet network's in-take communication path to ensure that no virus can reach or infect the secure part of a system. As high-security networks are mandatory for applications and processes that must comply with high governance standards, the physical nature of the data diode is easily explained to authorities, saving time by simplifying governmental approval processes.
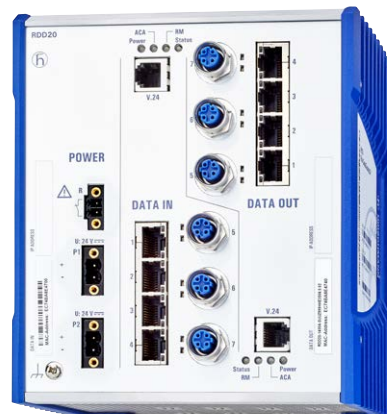
Applications

The Hirschmann Rail Data Diode is best used in applications where data from mission-critical systems must be transferred via the public internet. The device's physical nature and redundant power supply ensure that critical data can be securely and consistently transferred and monitored.

Markets

The Hirschmann Rail Data Diode is ideal for industries with vital applications, such as critical infrastructures in transportation, power and chemical plants. These markets rely on high-level security strategies to keep the related processes, and thus the community, safe.

The Hirschmann Rail Data Diode offers better Ethernet network security to provide industrial companies with data that they need to reduce costs through predictive maintenance.

Technical Information

Product Description				
Type	Rail Data Diode LV	Rail Data Diode HV	Rail Data Diode LV Train	Rail Data Diode HV Train
Description	Data Diode for 24 V operating voltage	Data Diode for 110 VDC and 110 / 230 VAC operating voltage	Data Diode for 24 V operating voltage with train approvals	Data Diode for 110 VDC and 110 / 230 VAC operating voltage with train approvals
Order No.	942 197 -001	942 197 -002	942 197 -003	942 197 -004
Interfaces				
Port Type and Quantity	14 ports in total, thereof 6 M12 "D"-coded and 8 RJ45			
Power Supply/Signaling Contact	2 x plug-in terminal block, 2-pin / 1 x plug-in terminal block, 2-pin			
V.24 Interface	2 x RJ11 socket			
SD-Card Slot	2 x SD card slot for Autoconfiguration Adapter ACA31			
Power Requirements				
Operating Voltage	2 x 24 VDC (16.8 .. 32 VDC)	2 x 110 VDC (77 .. 138 VDC), 2 x 110 / 230 VAC (93.5 .. 253 VAC)	2 x 24 VDC (16.8 .. 32 VDC)	2 x 110 VDC (77 .. 138 VDC), 2 x 110 / 230 VAC (93.5 .. 253 VAC)
Power Consumption	23 W	21 W	23 W	21 W
Ambient Conditions				
Operating Temperature	0 ºC to 60 ºC	0 ºC to 60 ºC	-40 ºC to 70 ºC	-40 ºC to 70 ºC
Relative Humidity (non-condensing)	5% to 95%			
Approvals				
Basis Standard	CE, EN 60131-2			
Safety of Industrial Control Equipment	EN 60950-1			
Transportation	–	–	EN50121-4, EN51055, EN 45545-2	EN50121-4, EN51055, EN 45545-2

Common Technical Data

Software	
Management	DNS Client, Dual Software Image Support, TFTP, SFTP, SCP, LLDP (802.1AB), LLDP-MED, SSHv2, V.24, HTTP, HTTPS, Traps, SNMP v1/v2/v3, Telnet
Diagnostics	Management Address Conflict Detection, MAC Notification, Signal Contact, Device Status Indication, TCPDump, LEDs, Syslog, Persistent Logging on ACA, Email Notification, Port Monitoring with Auto-Disable, Link Flap Detection, Overload Detection, Duplex Mismatch Detection, Link Speed and Duplex Monitoring, RMON (1,2,3,9), Port Mirroring 1:1, Port Mirroring 8:1, Port Mirroring N:1, RSPAN, SFLOW, VLAN Mirroring, System Information, Self-Tests on Cold Start, Copper Cable Test, SFP Management, Configuration Check Dialog, Switch Dump, Snapshot Configuration Feature
Configuration	Automatic Configuration Undo (roll-back), Configuration Fingerprint, Text-based Configuration File (XML), BOOTP/DHCP Client with Auto-Configuration DHCP Server: per Port, DHCP Server: Pools per VLAN, AutoConfiguration Adapter ACA31 (SD card), HiDiscovery, DHCP Relay with Option 82, Command Line Interface (CLI), CLI Scripting, Full-featured MIB Support, Web-based Management, Context-sensitive Help
Security	MAC-based Port Security, Port-based Access Control with 802.1X, Guest/unauthenticated VLAN, Integrated Authentication Server (IAS), RADIUS VLAN Assignment, RADIUS Policy Assignment, Multi-Client Authentication per Port, MAC Authentication Bypass, DHCP Snooping, Dynamic ARP Inspection, Automatic Denial-of-Service Prevention, LDAP, Ingress MAC-based ACL, Ingress IPv4-based ACL, Time-based ACL, VLAN-based ACL, Ingress VLAN-based ACL, ACL Flow-based Limiting, Access to Management restricted by VLAN, Device Security Indication, Audit Trail, CLI Logging, HTTPS Certificate Management, Restricted Management Access, Appropriate Use Banner, Configurable Password Policy, Configurable Number of Login Attempts, SNMP Logging, Multiple Privilege Levels, Local User Management, Remote Authentication via RADIUS, User Account Locking

Mechanical Construction	
Dimensions (W x H x D)	146 mm x 164 mm x 120 mm
Weight	2200 g
Protection Class	IP20

EMC Emitted Immunity	
FCC CFR47 Part 15	FCC 47 CFR Part 15 Class A
EN 55022	EN 55022 Class A

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

This information is subject to change without notice. All specifications must be determined from the user documentation.

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 plays 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.

Irrespective of the technology you use, you can rely on our full support – from implementation to 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 add value to your business. When it comes to signal transmissions, Belden is the No. 1 solutions provider. We know your business and want to understand your specific challenges and goals to show 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 integrated solution you need. Today, it may be a single cable, switch or connector, to solve a specific issue; tomorrow, it can be a complex range of integrated applications, systems and solutions. With the rise in smart, connected devices brought on by the Industrial Internet of Things (IIoT), together, we can make sure your infrastructure is ready to handle and make sense of the influx of data. Transform your business now with instant access to information, and make your vision a reality. Visit info.belden.com/iiot to learn more.

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.belden.com and follow us on Twitter @BeldenIND.

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