



# HIRSCHMANN

A **BELDEN** BRAND

## Product Bulletin

### PB 1060AG

#### **EAGLE One Security Router from Hirschmann™**

The EAGLE One industrial security router provides comprehensive network protection. It is a versatile, extremely ruggedized device that ensures maximum data protection for production systems.



**Designed to withstand the harshest industrial conditions, the EAGLE One security router is ideal for industries such as oil and gas, power and transportation.**

**This router complies with global standards and is easy to integrate into existing networks. A unique “firewall learning mode” reduces installation risks such as network interruptions or configuration errors.**

**Advanced redundancy capabilities and low power consumption round out the compelling feature set of this product.**

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

- Safe and cost-effective protection of automation networks
- Redundant backbone network connections for production cells
- User-friendly configuration and diagnostic options, such as the simple text-based configuration file for customized pre-configuration

The EAGLE One security router is the latest addition to the EAGLE family of security devices purpose built to meet the needs of industry. This device, which ensures maximum data security for production networks, is a combination of the familiar proven EAGLE20 software with state-of-the-art hardware.

Thanks to its reduced power consumption, it also offers significantly lower operating costs. In addition, the extended operating temperature range of the EAGLE One means that it can often be used without supplementary air-conditioning equipment. A further plus is its approval for use in potentially explosive environments. This means that even more industrial sectors, including oil and gas, can now benefit from EAGLE's proven security technology.

#### **Applications**

The robust design of the EAGLE One enables it to withstand the harshest environmental conditions and it can be used wherever maximum data security is called for. This makes it the ideal industrial security router for mechanical and plant engineering and industrial

automation, for example. Other potential areas for its versatile possible uses include the transportation sector, with applications ranging from road and rail transport right through to shipping. Indeed, the EAGLE One has been certified by Germanischer Lloyd for this very purpose. Since this security router is also approved for substations (IEC 61850-3) and for potentially explosive environments (ATEX and ISA 12.12.01 HazLoc), it can also be used in the oil and gas sector as well as in power transmission and distribution systems and such renewable energy applications as offshore platforms and wind farms.

#### **Your Benefits**

With the EAGLE One, you can now choose an industrial security router with an optimal price-performance ratio that offers all-round protection for your data communications. Extensive Layer 2 and Layer 3 redundancy functions ensure that, in the event of a fault, your system can switch over to a hot standby unit. The security router can also reliably safeguard your networks or segment them into separate security zones under the defense-in-depth concept. In addition, it offers the option of using NAT (network address translation) and Router Redundancy to provide your production cells with redundant backbone connections. The configuration and diagnostic features of the EAGLE One also leave nothing to be desired. In addition to the offline configuration tool and web interface, this is guaranteed by such Hirschmann tools as Industrial HiVision, HiView and HiDiscovery.



## Hirschmann™ EAGLE One Security Router

In Layer 2 mode, the industrial security router EAGLE One – which supports static IPv4 routing and Fast Ethernet (10/100 Mbit/s) – is transparent to redundancy protocols such as RSTP or MRP, including link error messages for a redundant ring coupling. In Layer 3 mode, it provides not only router redundancy but also stateful firewall and 1:1 NAT. The available transmission and encryption standards include PPPoE, PPP for dial-up modem, IKEv1/v2, IPsec and NAT. The security mechanisms include stateful packet inspection firewall and VPN. VPN connections can be controlled via digital input, which means that they can easily be integrated into remote service concepts. Other features of this security router include extensive management facilities and diagnostic tools, a robust metal housing for DIN rail mounting, and a redundant power supply for both DC and AC.

There are two available EAGLE One designs, with operating temperature ranges from 0°C to +60°C or from -40°C to +70°C. In addition, there are variants for twisted-pair cables or multimode fibers, as well as with a variety of approvals (e.g. ATEX, IEC 61850-3 and EN 50121-4).

### Benefits at a Glance

- All-round protection of automation networks with an optimal price-performance ratio
- Redundant backbone connections for production cells
- Firewall Learning Mode for easy and smooth commissioning
- Router redundancy plus stateful firewall and 1:1 NAT in Layer 3 mode
- Text-based configuration file for automated pre-configuration
- User-friendly configuration and diagnostics via Industrial HiVision, HiView, HiDiscovery, offline configuration tool and web interface
- Transparent Layer 2 mode (e.g. for RSTP and MRP)
- Wide range of transmission and encryption standards (PPPoE, PPP, IKEv1/v2, IPsec, NAT)
- A variety of security mechanisms (stateful packet inspection firewall, VPN)
- Digital input for controlling VPN connections
- Numerous management functions (SNMPv3, SSH2/SFTP, HTTPS, V.24 CLI, SSH1, SNMPv1/2)
- Optional extended operating temperature range from -40°C to +70°C (standard is 0°C to +60°C)
- Variants for twisted-pair cables (RJ45) and multimode fibers (SC)
- Robust metal housing for DIN rail mounting
- Meets principal standards and approvals:
  - Energy sector: IEC 61850-3, IEEE 1613
  - Hazardous areas: ATEX, ISA-12.12.01 Class 1 Div. 2
  - Transport sector: EN 50121-4
  - Shipping: Germanischer Lloyd
- Identical software to the EAGLE20, with identical housing dimensions
- Perfectly tailored for use with all Ethernet products from Hirschmann™, GarrettCom™ and Belden®

Thanks to its conformance with numerous approvals, the industrial security router EAGLE One offers maximum flexibility in its protection of industrial plants, oil rigs, substations and transportation systems.



## Technical Information

Product Description			
Type	EagleOne-0200T1T1	EagleOne-0200T1M2   EagleOne-0200M2T1	EagleOne-0200M2M2
Description	Industrial Security Router		
Port Type and Quantity	2 x FE		
Additional Interfaces			
V.24 Interface	1 x RJ11 socket serial interface for device configuration or modem attachment		
USB Interface	1 x USB socket to connect auto-configuration adapter ACA21-USB		
Digital Input	1 x plug-in terminal block, 2-pin		
Signaling Contact	1 x max. 60 V DC or max. 30 V AC, SELV, max. 1A		
Network Size			
Multimode Fiber (MM) 50/125 µm	–	0 to 5000 m, 8 dB Link Budget at 1300 nm, A = 1 dB/km, 3 dB Reserve, B = 800 MHz x km	
Multimode Fiber (MM) 62,5/125 µm	–	0 to 4000 m, 11 dB Link Budget at 1300 nm, A = 1 dB/km, 3 dB Reserve, B = 500 MHz x km	
Twisted Pair (TP)	0 to 100 m		n.v.
Power Requirements			
Operating Voltage	12 to 48 V DC, 24 V AC redundant power supply		
Power Consumption	5 W	6 W	7 W
Power Supply/Signaling Contact	1 x plug-in terminal block, 6-pin		
Software			
Management	SNMPv3, SSH2/SFTP, HTTPS, V.24 CLI, SSH1 and SNMPv1/2, HiDiscovery, Industrial HiVision, HiView		
Diagnostics	LLDP, LEDs (status, VPN, redundancy, link status, data, ACA), signal contact, logfile, syslog, configuration check		
Firewall	Firewall rules (incoming/outgoing, modem access, management), DoS prevention, MAC filter, user firewall for external activation of FW rules		
Routing and NAT	Static routing, multinetting, IP masquerading, 1-to-1 NAT, port forwarding		
VPN	Point to point, point to multipoint, remote enable/disable or via digital input, IPSec, IKEv1/v2, 3DES, AES (-128, -192, -256), Pre-Shared Key, X.509v3 certificates, MD5, SHA-1, NAT-T		
Redundancy Functions	Use in redundant networks/ring coupling, firewall redundancy (layer 4)		
Other Services	NTP, SNTP, DHCP Server/Client, DHCP Relay/Option 82, DynDNS, PPP, PPPoE, VLAN-Support		
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), dependent on device variant		
Storage/Transport Temperature	-40°C to +85°C		
Relative Humidity (non-condensing)	10% to 95%		
Conformal Coating	yes (dependent on device variant)		
Mechanical Construction			
Dimensions (WxHxD)	60 x 145 x 125 mm		
Weight	660 g		
Protection Class	IP20		
Mounting	DIN Rail 35 mm		
Approvals			
Declaration of Conformity	CE, FCC, EN 61131, C-TICK, EN 60950		
Safety of Industrial Control Equipment	cUL508 (pending, dependent on device variant)		
Hazardous Locations	ISA-12.12.-01 Class 1 Div. 2 – Haz. Loc, ATEX-95 Category 3G (Zone 2), (pending, dependent on device variant)		
Germanischer Lloyd	Pending, dependent on device variant		
Railway (norm)	EN 50121-4 (dependent on device variant)		
Substation	IEC 61850-3, IEEE 1613 (dependent on device variant)		
Reliability			
MTBF	74.5 years	69 years	64.2 years
Warranty	5 years (standard)		



## EAGLE One Security Router Configurations

EagleOne-02 00 T1 T1 T DD Z9 0000 HH E XX.X.XX

Design/Model

**EagleOne** = Security Router

Fast Ethernet Ports

**02** = 2 x 10/100 Mbit/s

Gigabit Ethernet Ports

**00** = Not available

Type Port 1

**T1** = 1 x Twisted Pair RJ45

**M2** = 1 x Multimode SC

Type Port 2

**T1** = 1 x Twisted Pair RJ45

**M2** = 1 x Multimode SC

Temperature Range

**S** = 0°C to +60°C

**T** = -40°C to +70°C

**E** = -40°C to +70°C inclusive Conformal Coating

Voltage Range

**DD** = 9.6 to 60 V DC/18 to 30 V AC; 9.6 to 60 V DC/18 to 30 V AC

Approvals

**Z9** = CE, FCC, EN 61131, EN 60950

**Y9** = Z9 + cUL508

**X9** = Z9 + cUL508, ISA12.12

**W9** = Z9 + ATEX

**WX** = X9 + ATEX

**U9** = Z9 + GL

**UY** = U9 + cUL508

**UX** = U9 + cUL508, ISA12.12

**UT** = U9 + cUL508 + EN 50121-4

**T9** = Z9 + EN 50121-4

**TY** = T9 + cUL508

**V9** = Z9 + IEC 61850, IEEE 1613

**VY** = V9 + cUL508

**VU** = V9 + cUL508, GL

**VT** = V9 + cUL508, EN 50121

Software Packages

**0000** = Reserved

OEM Type

**HH** = Standard

Configuration

**E** = Hirschmann™ Standard Configuration

Software Release

**XX.X.XX** = Current Software Release

NOTE: The part number categories (Software Packages, OEM Type, Configuration and Software Release) are optional.