



Industrial Firewall/VPN Router System

EAGLE One

EAGLE One is a powerful member of the EAGLE family, which has become the epitome of industry-standard firewall systems in recent years. This industrial security router, 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 additional 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. 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.

The EAGLE One firewall comes with Classic Firewall Software which offers all the essential features of a security router and a large range of protection functionalities for virtually every design of network.



Product Features

- All-round protection of automation networks with an optimal price-performance ratio
- Redundant backbone connections for production cells
- State-of-the-Art Statefull Inspection Firewall for bridged and routed traffic
- Router redundancy plus stateful firewall and 1:1 NAT in Layer 3 mode
- Text-based configuration file for automated pre-configuration
- Network Address Translation for every use case: 1:1 NAT, Double-NAT, Masquerading NAT, Destination NAT and Hairpin NAT
- User-friendly configuration and diagnostics via Industrial HiVision, HiView, HiDiscovery, offline configuration tool and web interface
- 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

Industrial Firewall/VPN Router System (continued)

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, IEE 1613 (dependent on device variant)		
Reliability			
MTBF	74.5 years	69 years	64.2 years
Warranty	5 years (standard)		

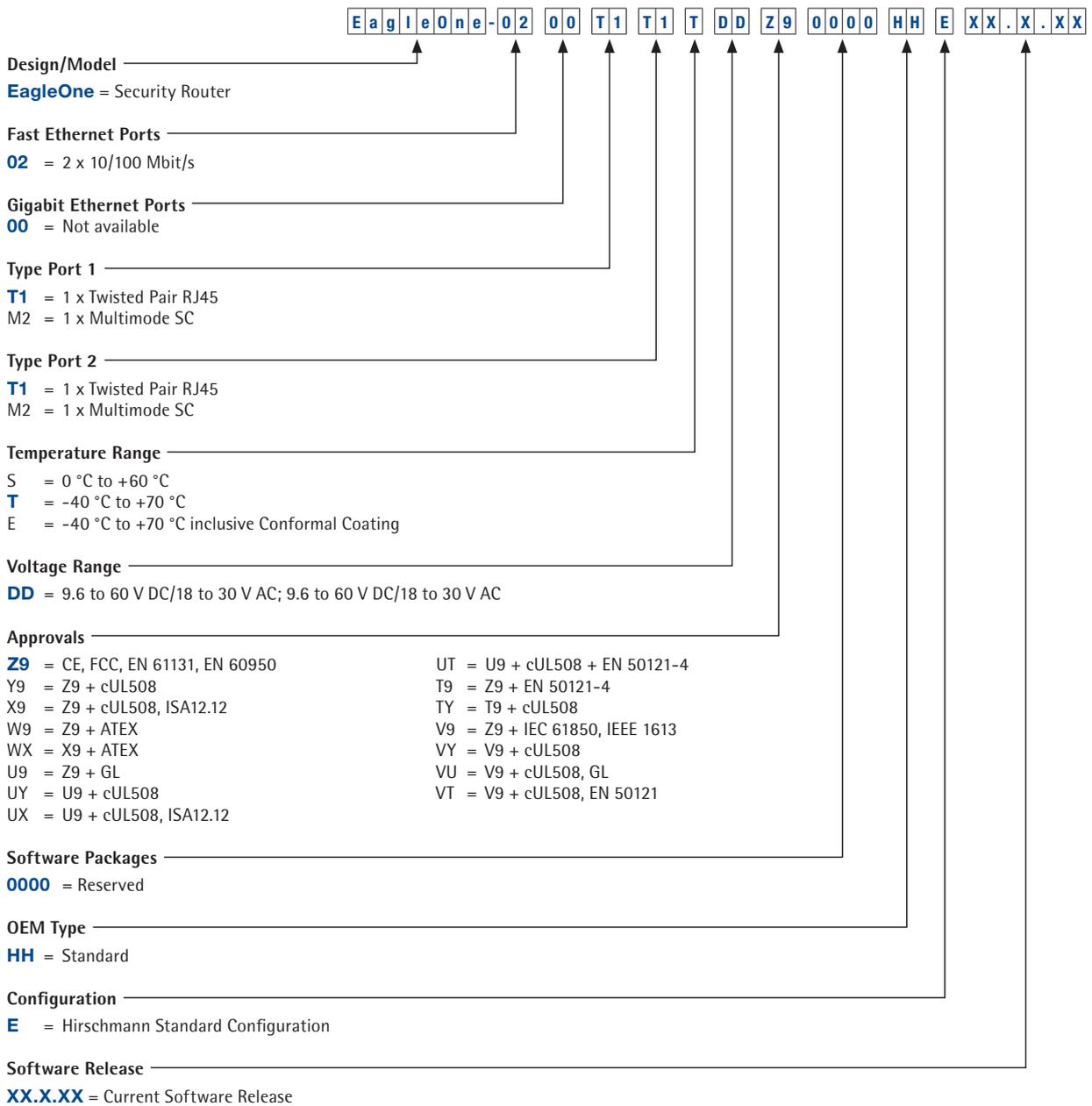
NOTE: These are the prominent technical specifications. For complete technical specifications visit: www.hirschmann.com



Configurator



EAGLE One Configurations



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



HIRSCHMANN

A BELDEN BRAND

Tofino Security Appliance



Tofino Xenon

The Tofino Xenon security appliance is the ideal solution for segmenting a control network into security zones. It can be installed into an existing control system with no changes to the network, forming 'conduits' of communications between the zones. The control engineer defines rules that specify which network devices are allowed to communicate and what protocols they may use. Deep Packet Inspection (DPI) options allow detailed filters to enforce security policy such as only allowing read commands to be sent to a PLC. Any network traffic that does not fit the rules is automatically blocked by the Tofino Xenon and reported as a security alert.

The standard Tofino Xenon includes a stateful firewall with layer 2, 3 and 4 filtering. Adding Enforcer LSMs provides stateful DPI to manage traffic based on high level message content, such as the commands/services being used or the registers/objects being accessed. There are multiple Enforcers available – each one providing inspection for a different protocol. The LSMs can be pre-loaded onto the Tofino Xenon at the factory, or purchased and installed at a later date as your needs change.

Using the free Tofino Configurator Software customers can configure Tofino Xenon Appliances over the network or with ACA21-USB. Tofino Configurator software makes it easy for the control technician to define rules that specify exactly which devices are allowed to communicate, what protocols they may use, and what actions those protocols perform. The built-in Test Mode allows customers to verify firewall rules without putting any risk to business critical operation.

Product Features

- All-around protection of automation networks with an optimal price-performance ratio
- Stateful firewall with Layer 2, 3 and 4 filtering for all Ethernet-based protocols
- Additional application layer filtering for SCADA and ICS protocols using flexible LSMs
- Prevention of Denial of Service (DoS) attacks with rate limit controls
- Simple configuration over the network or with security USB using the Tofino Configurator software
- Test mode for verifying firewall rules without risk to your operation
- LSMs pre-installed at factory or purchased separately
- Simultaneous event logging to remote syslog servers and local nonvolatile memory
- Audit capabilities for tracking configuration changes
- Safe installation in live networks without shutdown
- Tested for use with all major control system products
- 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



Technical Information

Product Description			
Type	TofinoXE-0200T1T1	TofinoXE-0200T1M2 TofinoXE-0200M2T1	TofinoXE-0200M2M2
Description	Industrial Security Firewall		
Port Type and Quantity	2 x 100BASE-TX	1 x 100BASE-FX 1 x 100BASE-TX	2 x 100BASE-FX
Additional Interfaces			
USB Interface	1 x USB socket to connect auto-configuration adapter ACA21-USB		
Digital Input	1 x plug-in terminal block, 2-pin		
Digital Output (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	–	
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	Tofino Configurator software		
Diagnostics	LEDs (power, mode, fault, save/load, reset, link status), signal contact, syslog, configuration verify		
Configuration	Network: Tofino Configurator uses secure communications to configure the Tofino Xenon security appliance Manual: Encrypted configuration files may be saved on an ACA21-USB device and loaded into the Tofino Xenon security appliance		
Operating Modes	Test: All traffic is allowed and alerts are generated as per user rules Operational: Traffic is filtered and alerts are generated as per user rules		
Firewall	Stateful layer 2, 3 and 4 filtering with optional deep packet inspection for ICS protocols (depending on purchased LSMs)		
System Requirements	Windows XP, Windows 7 (32- and 64-bit), or Windows Server 2003, 2008, or 2008 SR2		
Event Logging	Captured by a syslog server or locally into nonvolatile memory for later download via network or ACA21-USB		
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 (W x H x D)	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)		

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



Tofino Xenon Security Appliance Configurations

T o f i n o X e - 0 2 0 0 T 1 T 1 T D D Z 9 0 0 0 F T A T X X . X . X X

Design/Model

TofinoXe = Security Appliance

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 = 12 to 48 V DC/12 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

Preloaded Software Modules

0001 = FW (Event Logger LSM included)

0002 = NC

0003 = FW + NC

0005 = FW + MB

0007 = FW + NC + MB

0009 = FW + OPC

000B = FW + NC + OPC

000D = FW + MB + OPC

000F = FW + NC + MB + OPC

000H = FW + EIP

000K = FW + NC + EIP

000N = FW + MB + EIP

000Q = FW + NC + MB + EIP

000S = FW + OPC + EIP

000V = FW + NC + OPC + EIP

000X = FW + MB + OPC + EIP

000Z = FW + NC + MB + OPC + EIP

NOTE: FW = Firewall LSM (includes Event Logger LSM), NC = NetConnect LSM,

MB = Modbus TCP Enforcer LSM, OPC = OPC Enforcer LSM and EIP = EtherNet/IP Enforcer LSM

OEM Type

TA = Standard

Configuration

T = Tofino Standard Configuration

Software Release

XX.X.XX = Current Software Release

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



Multi-port Industrial Firewall System

EAGLE20/30

The EAGLE20-0400 and EAGLE30-0402 are multi-port firewalls in convection cooled metal DIN Rail housings which support eight LAN ports – two of which are Gigabit and two SHDSL ports. Available in two versions, the EAGLE20-0400 firewall supports 4 x 100 Mb/s ports, while the EAGLE30-0402 firewall supports 4 x 100 Mb/s ports, 2 x SHDSL ports and 2x1 Gb/s ports; the Gigabit ports are SFP ports.

With many configuration options available, a single device can be deployed in many scenarios, eliminating the need for multiple routers, which significantly saves both space and costs. Link speeds greater than 100 Mb/s are also available through the EAGLE30-0402's gigabit ports, in order to deliver the highest level of network security. With optional SHDSL Interfaces LANs can be cost effective connected to each other using existing telephone copper lines. Replacement of devices can be configured using USB sticks and SD cards making it possible to exchange faulty devices.

Each of these multi-port firewalls comes with HiSecOS – Hirschmann Security Operating System, the latest operating system for Industrial Security Routers, combining performance with robust security. It provides the user with comprehensive security mechanisms to protect networks against attacks and operating errors.



Product Features

- Availability of multiple ports offers cost savings and flexibility
- Ethernet in the First Mile (EFM) through newly added SHDSL-Interfaces
- Includes router redundancy for reduced downtime
- Increased router throughput performance
- Wirespeed packet filtering using Access Control List (ACL) rate limiters and Ingress Protection
- State-of-the-Art Statefull Inspection Firewall
- Network Address Translation for every use case: 1:1 NAT, Double-NAT, Masquerading NAT, Destination NAT and Hairpin NAT
- Simple intrusion detection
- Small form-factor pluggable (SFP) support for twisted-pair gigabit cables
- Ideal industrial firewall for networks with high-speed routing requirements
- Meets various standards and approvals

Technical Information

Product Description		
Type	EAGLE20-0400	EAGLE30-0402
Stateful Inspection Firewall	Firewall rules (incoming/outgoing, management), IP masquerading, 1:1 NAT, Double-NAT, Masquerading NAT, Destination NAT, Hairpin NAT, DoS Protection, Access Control Lists (ACLs)	
Description	Industrial Firewall, Router, Transparent (Bridging)	
Port Type and Quantity	4 x 10/100BASE-TX, TP-cable, RJ45-socket, Autocrossing, Autonegotiation, Autopolarity	4 x 10/100BASE-TX, TP-cable, RJ45-socket, Autocrossing, Autonegotiation, Autopolarity; 2 x FE/GE SFP slot, optional 2 x SHDSL
Order-No.	see online configurator	see online configurator
Interfaces		
V.24 Interface	1 x RJ11 socket (serial interface for device configuration)	
USB Interface	1 x USB socket (to connect auto-configuration adapter ACA22-USB)	
SD Interface	1 x SD socket (to connect auto-configuration adapter ACA31)	
Power Requirements		
Power Supply/Signaling Contact	For CC Power Supply: 2 x plug-in terminal block 2-pin, for K9 Power Supply: 1 x plug-in terminal block 3-pin	
Power Consumption	max. 19 W	
Operating Voltage	2 x 24/36/48 V DC (18 to 60 V DC), or 1 x 60/110/125/220/250 V DC (48 V to 320 V DC) and 110/120/220/230 V AC (88 to 265 V AC)	
Software		
Software Version	HiSecOS 02.0	
Security	Firewall rules (incoming/outgoing, management), DoS prevention, IPsec VPN, Layer 3 and Layer 2 Access Control Lists (ACL), ACL flow based limiting, Audit trail, Management VLAN, Role based Access Control, IEEE 1686 compliant configuration possible, Ingress storm protection	
Routing	VLAN and port based routing, static routing, multinetting, IP masquerading, 1-to-1 NAT, port forwarding, Static and Dynamic ARP entries, OSPFv2	
Management	SNMPv3, SSH2/SFTP, HTTPS, V.24 CLI, SNMPv1/2, local and central User Management (RADIUS), HiDiscovery, Industrial HiVision, HiView	
Diagnostics	LEDs (Power, Link Status, Data, Status, ACA, RM), Signal Contact (24 V DC/1 A), Log File, Syslog, Configuration check RMON (Statistic), SFP diagnostics (temperature, optical transmit and receive power), trap for changes and configuration saves, Counter for ACL Rules	
Configuration	Command Line Interface (CLI), web interface, Auto Configuration Adapter (ACA22, ACA31), HiDiscovery, Industrial HiVision, HiView	
Other Services	NTP, VLAN support (IEEE 802.1Q), rate limiter	
Redundancy Functions	VRRP (Virtual Router Redundancy Protocol)	
Protocols	Serial, HTTPS, SSH, SNMP V1/V2/V3, LLDP	
Mechanical Stability		
IEC 60068-2-27 Shock	15 g, 11 ms duration, 18 shocks	
IEC 60068-2-6 Vibration	1 mm, 2 Hz to 13.2 Hz; 0.7 g, 13.2 Hz to 100 Hz	
Construction		
Weight	1.2 to 1.9 kg	
Mounting	DIN Rail 35 mm	
Protection Class	IP20	
Dimensions (W x H x D)	Temperature Standard (S): 90 x 164 x 120 mm (for WAN: 99); 108 x 164 x 120 mm (for WAN: H2) Temperature Extended (T, E): 98 x 164 x 120 mm (for WAN: 99); 116 x 164 x 120 mm (for WAN: H2)	
Ambient Conditions		
Operating Temperature	-40 °C to +70 °C	
Relative Humidity (non-condensing)	10% to 95%	
Storage/Transport Temperature	-40 °C to +85 °C	
Approvals		
Germanischer Lloyd	Germanischer Lloyd	
Manufacturer Declaration of Conformity	CE, C-Tick, FCC	
Safety of Industrial Control Equipment	cUL 508	
Hazardous Locations	cUL Approval according to ISA-12.12.-01 Class 1 Div. 2 Group A, B, C, D	
Substation	EN 61850-3, IEEE 1613	
Traffic Controller	NEMA TS 2	
Scope of Delivery and Accessories		
Scope of Delivery	Device, terminal block, operating instructions, CD-manual	
Accessories to Order Separately	Rail power supply RPS 30, RPS 80 EEC, RPS 120 EEC, terminal cable, network management Industrial HiVision, Auto-configuration adapter (ACA22-USB EEC or ACA31), 19" installation frame	
Reliability		
MTBF Range	46.3 to 67.1 years	
Warranty	5 years standard	

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

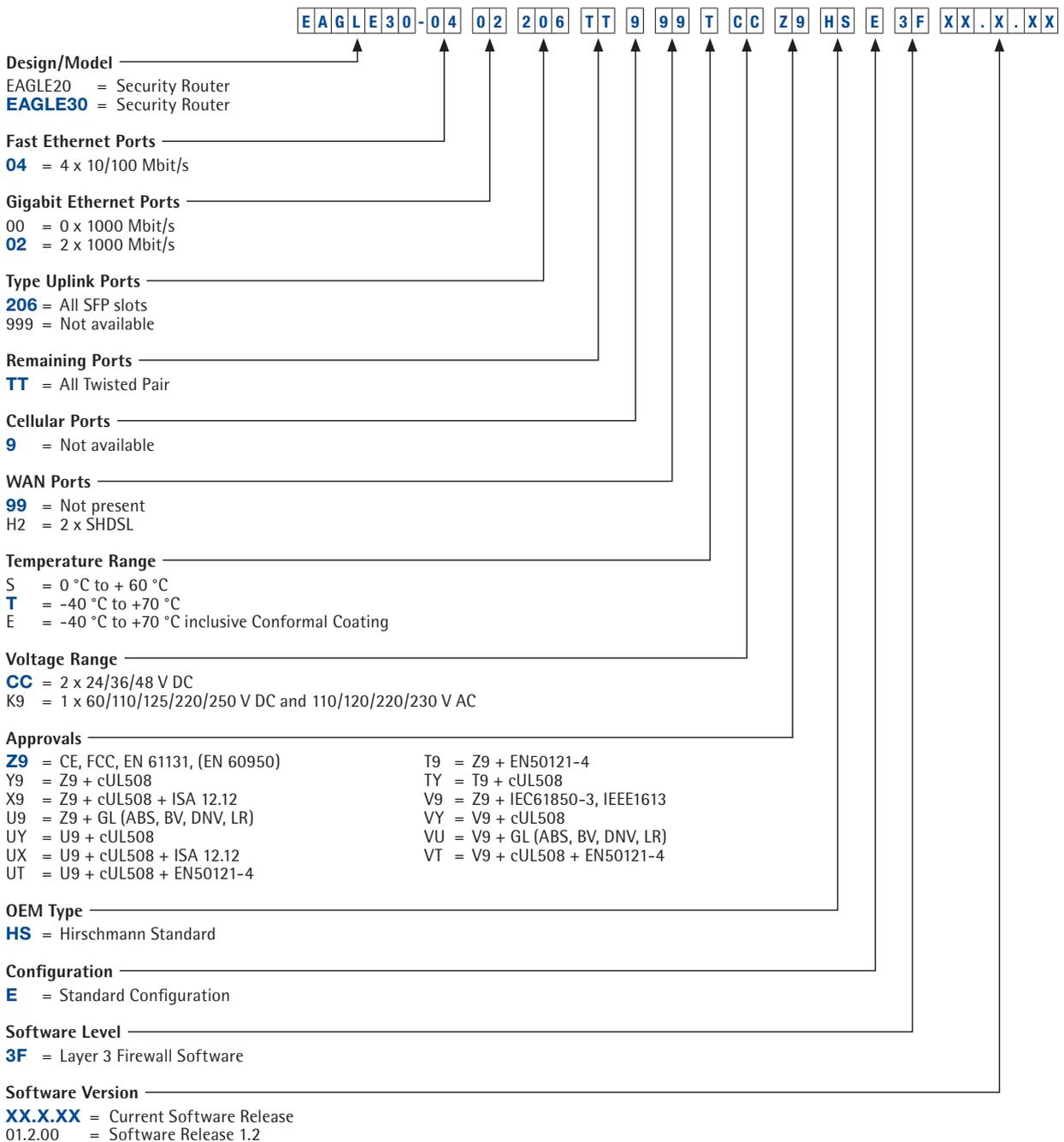


Configurator



Multi-port Industrial Firewall Configurations

EAGLE20-0400 and EAGLE30-0402



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