TYPE APPROVAL CERTIFICATE

This is to certify:

That the Network and Communication Components

with type designation(s)
Eagle 20/30; Eagle 40 ; RSP20, 25, 30, 35; RSPE, RSPM

Issued to

Hirschmann Automation and Control GmbH
Neckartenzlingen, Baden-Württemberg, Germany

is found to comply with
 DNV rules for classification – Ships, offshore units, and high speed and light craft

Application :

Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV.

Location classes:

Temperature	**D***
Humidity	**B**
Vibration	**A**
EMC	**B**
Enclosure	**A**

***see Application/Limitation**

Issued at **Hamburg** on **2024-07-08**

This Certificate is valid until **2028-06-21**.
DNV local station: **Augsburg**

Approval Engineer: **Heinz Scheffler**

for DNV
Digitally signed by: Dariusz Lesniewski
Location: DNV Hamburg, Germany

Product description
Industrial Ethernet Firewall EAGLE
The devices support switched ETHERNET networks that conform to the IEEE 802.3 standard. The devices are mounted by snapping them onto the DIN rail. The product designation of the device is made from combining the desired product characteristics in accordance with the following product code.

Product Code EAGLE…

Position	Characteristic	Characteristic value	Description
6 … 7	Product	20	Router without gigabit ports
		30	Router with gigabit ports
8	(hypen)	-	
9 … 10	Number of 10/100 Mbit/s ports	04	4 x 10/100 Mbit/s Ethernet ports
11 … 12	Number of 100/1000 Mbit/s ports	00	0 x 100/1000 Mbit/s Ethernet ports
		02	2 x 100/1000 Mbit/s Ethernet ports
13 … 15	Configuration of the uplink ports	2O6	2 x SFP slot for 100/1000 Mbit/s F/O connection
		999	Not present
16 … 17	Configuration of the other ports	TT	All the other port are RJ45 sockets for twisted pairs
18	Cellular phone interface	9	Not present
19 … 20	WAN port	99	Not present
21	Temperature range	S	Standard 0°C - 60°C
		T	Extended -40°C - 70°C
		E	Extended with conformal coating -40°C - 70°C
22 … 23	Operating voltage	CC	2 voltage inputs for redundant voltage supply Rated voltage range 24 - 48V DC
		K9	1 voltage input Rated voltage range 110 - 230V AC, 50 - 60Hz Rated voltage range 60 … 250V DC
24 … 25	Certifications		Not relevant for this certificate

Software release: 01.x, 02.x, 03.x

Industrial Security Router EAGLE
The devices support switched ETHERNET networks that conform to the IEEE 802.3 standard. The devices are mounted by snapping them onto the DIN rail. The product designation of the device is made from combining the desired product characteristics in accordance with the following product code.

Product Code EAGLE…

Position	Characteristic	Characteristic value	Description
1 … 7	Product	EAGLE40	Security Router and Firewall
8	(hypen)	-	
9 … 10	Number of Gigabit-Ethernet-Ports	07	7 x 1000 Mbit/s Ethernet ports
11 … 13	Configuration of the uplink ports	2O6	2 x SFP, 5 × Twisted pair RJ45
14	Temperature range	T	Extended -40 °C ... +70 °C
15 … 16	Supply voltage	CC	2 × Voltage input Rated voltage range: 24 V DC ... 48 V DC
17 … 18	Approval Part 1+ 2	D9	CE, FCC, UL 62368-1, DNV
19 … 20	Type	HS	Hirschmann Standard
21	Software Configuration	R	Router Mode
22	Intrusion Detection System (IDS)	A	Not present
23 … 24	Security Modules	NF	No additional modules, firewall only
25 … 29	Software Version	HiSecOS-04.7.xx	Latest Software Version 00

Rail Switch RSPE, Rail Switch Media Module RSPM
The RSPE 30/32/35/37 devices are mounted by snapping them onto DIN rail. The devices work without a fan. By using media modules, up to 16 additional Fast Ethernets ports on a RSPM basic device are possible. The RSPM media modules are designed for exclusive use in a RSPE basic device.
The product designation of the device is made from combining the desired product characteristics in accordance with the following product code.

Product Code RSPE…

Position	Characteristic	Characteristic value	Description
1 … 4	Product	RSPE	Rail Switch Power Enhanced
5	Data rate	3	10/100/1000 Mbit/s ports
6	Hardware type	0	Standard
		2	Standard with PoE or PoE+
		5	Extended redundancy
		7	Extended redundancy with PoE or PoE+
7	(hypen)	-	
8 … 9	Number of 10/100 Mbit/s ports	24	24 x 10/100Mbit/s Ethernet ports
10 … 11	Number of 10/100/1000 Mbit/s ports	04	4 x 10/100/1000Mbit/s Ethernet ports
12 … 14	Configuration of uplink ports	4O7	4 x Combo ports for 10/100/1000Mbit/s connections
15 … 17	Configuration of other ports	T99	8 x RJ45 sockets for 10/100Mbit/s twist pair connections, 2 x free slots for media module
18	(hypen)	-	
19	Temperature range	S	Standard 0°C … +60°C
		T	Extended -40°C … +70°C
		E	Extended with conformal coating -40°C … +70°C
20 … 21	Supply voltage	CC	2 voltage inputs for redundant power supply
			Rated voltage 24 … 48V DC Voltage range incl. maximum tolerances: 18…60V DC
		K9	1 voltage input
			Rated voltage 110 … 230V AC, 50 … 60Hz Voltage range incl. maximum tolerances: 88…265V AC, 47…63Hz
		KK	2 voltage inputs for redundant power supply
			Rated voltage 110 … 230V AC, 50 … 60Hz Voltage range incl. maximum tolerances: 88…265V AC, 47…63Hz
		PP	2 voltage inputs for redundant power supply
			When using with PoE powered devices: Rated voltage 48V DC Voltage range incl. maximum tolerances: 47…57V DC When using with PoE+ powered devices: Rated voltage 54V DC Voltage range incl. maximum tolerances: 53…57V DC Without using PoE: Rated voltage 24…48V DC Voltage range incl. maximum tolerances: 19…60V DC

Position	Characteristic	Characteristic value	Description
		XX	Any letter, depending on approvals and/or declarations
24 … 25	Software packages	XX	Any letter, depending on software package
26 … 27	Customer specific version	HH	Standard
		S	Standard
28	HW configuration	M	Fast MRP (Media Redundancy Protocol)
		P	PRP (Parallel Redundancy Protocol)
		H	HSR (High availability Seamless Redundancy)
		D	DLR (Device Level Ring)
29	SW configuration	X	Any letter, depending on SW configuration
30 … 31	Software level	2S	HiOS Layer 2 Standard
		2A	HiOS Layer 2 Advanced
		3S	HiOS Layer 3 Standard
32 … 36	Software version	03.x.	SW version 03.x
		04.x.	SW version 04.x
		05.x	SW version 05.x
		06.x	SW version 06.x
		07.x	SW version 07.x
		08.x	SW version 08.x
37 … 38	Maintenance	XX	Any letter, depending on maintenance

Product Code RSPM…

Position	Characteristic	Characteristic value	Description
1 … 4	Product	RSPM	Rail Switch Media Modul
5	Data rate	2	10/100 Mbit/s ports
6	Hardware type	0	Standard
		2	Standard with PoE or PoE+
7	(hypen)	-	
8 … 10	Port configuration Part A	4Z6	4 x SFP slots for 100Mbit/s F/O connections
		4T1	4 x RJ45 sockets for10/100Mbit7s twisted pair
11 … 13	Port configuration Part B	4Z6	4 x SFP slots for 100Mbit/s F/O connections
		4T1	4 x RJ45 sockets for10/100Mbit7s twisted pair
14	Temperature range	S	Standard 0°C … +60°C
		T	Extended –40°C … +70°C
		E	Extended with conformal coating -40°c … +70°C
15 … 16	Approvals / Declarations	Z9	CE, FCC, EN61131, EN60950-1
		XX	Any letter, depending on approvals and/or declarations
17 … 18	Customization	HH	Hirschmann Standard
19	Hardware configuration	S	Standard
20	Software configuration	9	without configuration
21 … 25	Software version	99.9	without software
26 … 27	Maintenance	99	No maintenance version

Industrial Ethernet Rail Switch Power RSP20, RSP25, RSP30, RSP35
The device name corresponds to the product code:
- The devices RSP20 and RSP25 are Fast Ethernet switches
- The devices RSP30 and RSP35 are Gigabit Ethernet switches.

The device is mounted by latching in place on a DIN rail and work without a fan.

The product designation of the device is made from combining the desired product characteristic in accordance with the following product code.

Product Code RSPE...

Position	Characteristic	Characteristic value	Description
1 ... 6	**Product**	RSP20	Rail Switch Power, 10/100 Mbps, Standard
		RSP25	Rail Switch Power, 10/100 Mbps, Enhanced Redundancy
		RSP30	Rail Switch Power, 10/100/1000 Mbps, Standard
		RSP35	Rail Switch Power, 10/100/1000 Mbps, Enhanced Redundancy
7 ... 8	No. of Ports Fast Ethernet	08	8x10/100 Mbps Ethernet Ports
		11	11x10/100 Mbps Ethernet Ports
9 ... 10	No of Ports Gigabit Ethernet	00	0x10/100/1000 Mbps Ethernet Ports
		03	3x10/100/1000 Mbps Ethernet Ports
11 ... 12	Uplink Port Configuration	3Z6	all SFP Slot (100Mbps)
		3O6	all SFP Slot (1000Mbps
13 ... 14	Port Configuration	TT	all Twisted Pair /RJ45
		ZT	4x SFP slot (100Mbps); remains Twisted Pair / RJ45
15	Temperature range	S	Standard 0°C up to 60°C
		T	Extended −40°C up to 70°C
		E	Extended −40°C up to 70°C inclusive conformal coating
16 ... 17	Voltage range	CC	2 voltage inputs for redundant power supply Rated voltage: 24...48 V DC Voltage range incl. maximum tolerances: 18...60 V DC
		K9	1 voltage input Rated voltage: 110...230 V AC, 50...60Hz Voltage range incl. maximum tolerances: 88...265 V AC, 47...63 Hz
		KK	2 voltage inputs for redundant power supply Rated voltage: 110...230 V AC, 50...60Hz Voltage range incl. maximum tolerances: 88...265 V AC, 47...63 Hz
18 ... 19	Approvals	Z9	CE; FCC; EN61131
		XX	Any letter, depending on approvals

Position	Characteristic	Characteristic value	Description
20 … 21	Redundancy Configuration	HS	Hirschmann Standard
		HM	Hirschmann Fast MRP (Media Redundancy Protocol)
		HP	Hirschmann PRP (Parallel Redundancy Protocol)
		HH	Hirschmann HSR (High availability Seamless Redundancy)
		HD	Hirschmann DLR (Device Level Ring)
		HN	Hirschmann NAT (Network Address Translation)
		XM	Hirschmann Fast MRP (Media Redundancy Protocol)
		XS, XM, XH, XD, XN, XM	X = any letter, for customized version.
22(j)	Software Configuration	H	Standard
		X	X = any letter for customized configuration
23 … 24	Software Level	2S	HiOS Layer 2 Standard
		2A	HiOS Layer 2 Advanced
		3S	HiOS Layer 3 Standard
25 … 29	Software version	03.x	SW version 03.x.
		04.x	SW version 04.x.
		05.x	SW version 05.x.
		06.x	SW version 06.x.
		07.x	SW version 07.x.
		08.x	SW version 08.x.
30 … 31	Maintenance version	xx	Any letter, depending on maintenance

Application/Limitation
Location classes Temperature D: –40°C, 16h
Equipment for installation outside a distance of 5 m from a standard or a steering magnetic compass.

Approval conditions
The Type Approval covers hardware listed under Product description. When the hardware is used in applications to be classed by DNV, documentation for the actual application is to be submitted for approval by the manufacturer of the application system in each case. Reference is made to DNV Rules for Ships Pt.4 Ch.9 Control and Monitoring Systems. If the control system is intended for remote software maintenance the functionality shall be part of the system documentation as required in DNV Rules for Ships Pt.4 Ch.9 Control and Monitoring Systems.

Product certificate
If specified in the Rules, ref. Pt.4 Ch.9 Sec.1, the control and monitoring system in which the above listed hardware is used shall be delivered with a product certificate. For each such delivery the certification test is to be performed at the manufacturer of the application system before the system is shipped to the yard. The test shall be done according to an approved test program. After the certification the clause for application software control will be put into force.

Clause for application software control
All changes in software are to be recorded as long as the system is in use on board. The records of all changes are to be forwarded to DNV for evaluation and approval. Major changes in the software are to be approved before being installed in the computer.

Type Approval documentation
See ANNEX

Place of Production
See ANNEX

Tests carried out
Applicable tests according to Class Guideline DNV-CG-0339, August 2021.

Marking of product
The products to be marked with:
- device name
- manufacturer name
- serial number.

Periodical assessment
The scope of the periodical assessment is to verify that the conditions stipulated for the type are complied with, and that no alterations are made to the product design or choice of systems, software versions, components and/or materials.

The main elements of the assessment are:
- Ensure that type approved documentation is available
- Inspection of factory samples, selected at random from the production line (where practicable)
- Review of production and inspection routines, including test records from product sample tests and control routines
- Ensuring that systems, software versions, components and/or materials used comply with type approved documents and/or referenced system, software, component and material specifications
- Review of possible changes in design of systems, software versions, components, materials and/or performance, and make sure that such changes do not affect the type approval given
- Ensuring traceability between manufacturer's product type marking and the type approval certificate

Periodical assessment is to be performed after 2 years and after 3.5 years. A renewal assessment will be performed at renewal of the certificate.

END OF CERTIFICATE