TYPE APPROVAL CERTIFICATE

Certificate No:
TAA00000XJ
Revision No:
3

This is to certify:

That the Network and Communication Components

with type designation(s)
Greyhound Switch GRS1020/1120/1030/1130, Greyhound Media Modules GRM20, Greyhound Switch GRS1042/1142, Greyhound Media Modules GMM20/30/40/42, Greyhound Power Supply Units GPS1/GPS2/GPS3

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 **2021-12-22**

for **DNV**

This Certificate is valid until **2026-12-21**.
DNV local station: **Augsburg**

Approval Engineer: **Heinz Scheffler**

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Joannis Papanuskas
Head of Section

Product description

The device name corresponds to the product code. The product code is made up of characteristics with defined positions. The characteristic values stand for specific product properties.

GREYHOUND Switch GRS1020/1120/1030/1130

Item	Characteristic	Characteristic value	Description
1..3	Product	GRS	Greyhound Switch
4	Series	1	Greyhound Series
5	Port position	0 1	Ports front, power supply rear Ports rear, power supply rear
6	Data rate	2 3	FE-Switch FE-Switch with GE-Uplink Ports
7	PoE support	0	No PoE support
8	Hypen	-	
9…12	Configuration fixed ports	16T9 8T8Z	16 x Fast Ethernet TX ports 8xFE TX ports + 8xFE SFP ports
13	Operating temperature range	S C T E	0°C …+60°C 0°C …+60°C, conformal coating -40°C … +70°C -40°C … +70°C, conformal coating
14	Power supply unit 1	C M	Rated voltage: 24 ... 48 VDC Voltage range incl. maximum tolerances: 18…60 V DC Rated voltage: 110…230 V AC, 50…60Hz Voltage range incl. maximum tolerances: 88…265 V AC, 47…63 Hz
15	Power supply unit 2	C M	Rated voltage: 24 ... 48 VDC Voltage range incl. maximum tolerances: 18…60 V DC Rated voltage: 110…230 V AC, 50…60Hz Voltage range incl. maximum tolerances: 88…265 V AC, 47…63 Hz
16…17	Approvals		Not relevant for this certificate
18…19	Customization	HH XX	Hirschmann Standard Any letter depending on customisation only at the front pannel.
20	Hardware configuration	S	Standard
21	Software configuration	E	Standard
22…23	Software level	2S	HiOS Layer 2 Standard
24…28	Software version	04.x 05.x 06.x 07.x 08.x 09.x	HiOS 04.x HiOS 05.x HiOS 06.x HiOS 07.x HiOS 08.x HiOS 09.x
29…30	Maintenance version	00 XX	Maintenance version 00 Any number depending on maintenance version
35…37	Production location	-NT -SZ -PN	Neckartenzlingen Further manufacturing places

The product code may also be printed without the production location item

GREYHOUND Switch Media Module GRM20

Item	Characteristic	Characteristic value	Description
1..3	Product	GRM	Greyhound Switch Media Module
4	Data rate	2	10/100 Mbit/s Ports
5	PoE support	0	No PoE support
6	Hypen	-	
7…8	Configuration ports 1+3	TT ZZ MM NN VV UU	2 x TP TX, RJ45, 100 Mbit/s 2 x SFP Slot, 100 Mbit/s 2 x MM FX, DSC, 100 Mbit/s 2 x MM FX, ST, 100 Mbit/s 2 x SM FX, DSC, 100 Mbit/s 2 x SM FX, ST, 100 Mbit/s
9…10	Configuration ports 5+7	TT ZZ MM NN VV UU	2 x TP TX, RJ45, 100 Mbit/s 2 x SFP Slot, 100 Mbit/s 2 x MM FX, DSC, 100 Mbit/s 2 x MM FX, ST, 100 Mbit/s 2 x SM FX, DSC, 100 Mbit/s 2 x SM FX, ST, 100 Mbit/s
11…12	Configuration ports 2+4	TT ZZ MM NN VV UU	2 x TP TX, RJ45, 100 Mbit/s 2 x SFP Slot, 100 Mbit/s 2 x MM FX, DSC, 100 Mbit/s 2 x MM FX, ST, 100 Mbit/s 2 x SM FX, DSC, 100 Mbit/s 2 x SM FX, ST, 100 Mbit/s
13…14	Configuration ports 6+8	TT ZZ MM NN VV UU	2 x TP TX, RJ45, 100 Mbit/s 2 x SFP Slot, 100 Mbit/s 2 x MM FX, DSC, 100 Mbit/s 2 x MM FX, ST, 100 Mbit/s 2 x SM FX, DSC, 100 Mbit/s 2 x SM FX, ST, 100 Mbit/s
15	Operating temperature range	S C T E	0°C …+60°C 0°C …+60°C, conformal coating -40°C … +70°C -40°C … +70°C, conformal coating
16…17	Approvals		Not relevant for this certificate
18…19	Customization	HH XX	Hirschmann Standard Any letter depending on customisation only at the front pannel.
20	Hardware configuration	S	Standard
21…23	Production Location	-NT -SZ -PN	Neckartenzlingen Further manufacturing places

The product code may also be printed without the production location item

GREYHOUND Switch GRS1042/1142

Item	Characteristic	Characteristic value	Description
1..3	Product	GRS	Greyhound Switch
4	Series	1	Greyhound Series
5	Port position	0 1	Ports front, power supply rear Ports rear, power supply rear
6	Data rate	4	GE-Switch
7	PoE support	2	With PoE support
8	Hypen	-	
9…12	Configuration fixed ports	AT2Z 6T6Z	10 x GE TX + 2 x GE SFP 6 x GE TX + 6 x GE SFP
13	Operating temperature range	S C T E	0°C …+60°C 0°C …+60°C, conformal coating -40°C … +70°C -40°C … +70°C, conformal coating
14	Power supply unit 1	L H	Low voltage (combinable with Power supply unit, characteristic value C or P) 24 … 48 VDC 48 … 54 VDC High voltage (combinable with Power supply unit, characteristic value K) 110 … 230 VAC, 50…60Hz
15	Power supply unit 2	L H	Low voltage (combinable with Power supply unit, characteristic value C or P) 24 … 48 VDC 48 … 54 VDC High voltage (combinable with Power supply unit, characteristic value K) 110 … 230 V AC, 50…60Hz
18…19	Approvals		Not relevant for this certificate
20…21	Customization	HH XX	Hirschmann Standard Any letter depending on customisation only at the front pannel.
22	Hardware configuration	S	Standard
23	Software configuration	E B I P	Standard Diagnostic User (BDEW) Ethernet / IP Profinet
24…25	Software level	2A 3A	HiOS Layer 2 Advanced HiOS Layer 3 Advanced
	Software packages	UR MR 99	Unicast Routing Unicast + Multicast Routing Standard
28…32	Software version	04.x 05.x 06.x 07.x 08.x 09.x	HiOS 04.x HiOS 05.x HiOS 06.x HiOS 07.x HiOS 08.x HiOS 09.x
33…34	Maintenance version	00 XX	Maintenance version 00 Any number depending on maintenance version
35…37	Production location	-NT -SZ -PN	Neckartenzlingen Further manufacturing places

The product code may also be printed without the production location item

GREYHOUND Switch Media Module GMM20/30/40/42

Item	Characteristic	Characteristic value	Description
1..3	Product	GMM	Greyhound Switch Media Module
4	Data rate and type	2 3 4	FE Fiber Ports FE Fiber + FE/GE TX Ports FE/GE SFP + FE/GE TX Ports
5	Hardware type	0 2	No PoE support PoE support
6	Hypen	-	
7…8	Configuration ports 1+3	TT OO MM NN VV UU	2 x TX, 10/100/1000Mbit/s 2 x SFP Slot, 100/1000 Mbit/s 2 x MM FX, DSC, 100 Mbit/s 2 x MM FX, ST, 100 Mbit/s 2 x SM FX, DSC, 100 Mbit/s 2 x SM FX, ST, 100 Mbit/s
9…10	Configuration ports 5+7	TT OO MM NN VV UU	2 x TX, 10/100/1000Mbit/s 2 x SFP Slot, 100/1000 Mbit/s 2 x MM FX, DSC, 100 Mbit/s 2 x MM FX, ST, 100 Mbit/s 2 x SM FX, DSC, 100 Mbit/s 2 x SM FX, ST, 100 Mbit/s
11…12	Configuration ports 2+4	TT OO MM NN VV UU	2 x TX, 10/100/1000Mbit/s 2 x SFP Slot, 100/1000 Mbit/s 2 x MM FX, DSC, 100 Mbit/s 2 x MM FX, ST, 100 Mbit/s 2 x SM FX, DSC, 100 Mbit/s 2 x SM FX, ST, 100 Mbit/s
13…14	Configuration ports 6+8	TT OO MM NN VV UU	2 x TX, 10/100/1000Mbit/s 2 x SFP Slot, 100/1000 Mbit/s 2 x MM FX, DSC, 100 Mbit/s 2 x MM FX, ST, 100 Mbit/s 2 x SM FX, DSC, 100 Mbit/s 2 x SM FX, ST, 100 Mbit/s
15	Operating temperature range	S C T E	0°C …+60°C 0°C …+60°C, conformal coating -40°C … +70°C -40°C … +70°C, conformal coating
16…17	Approvals		Not relevant for this certificate
18…19	Customization	HH XX	Hirschmann Standard Any letter depending on customisation only at the front pannel.
20	Hardware configuration	S	Standard
21	Software configuration	9	Without Software Configuration
22…26	Software version	99.9	No Software
27…28	Maintenance	99	No Maintenance version
29…31	Production location	-NT -SZ -PN	Neckartenzlingen Further manufacturing places

The product code may also be printed without the production location item

GREYHOUND Power Supply GPS1 /GPS2 /GPS3

Item	Characteristic	Characteristic value	Description
1..3	Product	GPS	Greyhound Power Supply Unit
4	Hardware type	1 2 3	Standard (Switch) PoE (PoE only) PoE (PoE and Switch)
5	Hypen	-	
6	Power supply unit	C K P	Rated voltage: 24...48 VDC Rated voltage: 110…230 V AC, 50…60Hz Rated voltage: 48VDC (PoE)…54VDC (PoE+)
7	Operating temperature range	S C T E	0°C …+60°C 0°C …+60°C, conformal coating -40°C … +70°C -40°C … +70°C, conformal coating
8…9	Approvals		Not relevant for this certificate
10…11	Customization	HH XX	Hirschmann Standard Any letter depending on customisation only at the front pannel.
12…14	Production location	-NT -SZ -PN	Neckartenzlingen Further manufacturing places

The product code may also be printed without the production location item

Application/Limitation

Location class Temperature D: -40°C / 16h

EMC B: Equipment for installation outside a distance of 5 m from a standard or a steering magnetic compass.
The installation requirements according to the User Manual's Installation are to be observed.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 manufacture

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