

TYPE APPROVAL CERTIFICATE

Certificate No:
TAA0000143
Revision No:
2

This is to certify:**That the Network and Communication Components**

with type designation(s)

Greyhound Switch GRS1042/1142, Greyhound Media Module 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 GL 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 GL.****Location classes:**

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

***see Application/Limitation**Issued at **Hamburg** on **2019-10-04**This Certificate is valid until **2022-03-16**.DNV GL local station: **Augsburg**Approval Engineer: **Heinz Scheffler**for **DNV GL**Digitally Signed By:
Papanuskas, Joannis**Joannis Papanuskas
Head of Section**

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid. The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.



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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 1040 Switch

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	0	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 slot 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 slot 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 VAC, 50...60Hz
16	Filler Panels PSU Slots	L H	No filler panels assembled Filler panel 2 nd PSU
17	Filler Panels media modules	0 1 2	No filler panels assembled 1 x filler panel 2 x filler panel
18...19	Approvals		Not relevant for this certificate
20...21	Customization	HH	Hirschmann Standard
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
26...27	Software packages	UR MR	Unicast Routing Unicast + Multicast Routing
28...32	Software version	05.x 06.x 07.x 08.x	HiOS 05.x HiOS 06.x HiOS 07.x HiOS 08.x
33...34	Maintenance version	00 01	Maintance version 00 Maintance version 01
35...37	Production location	-NT	Produced in Neckartenzlingen

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GREYHOUND 1040 Switch Media Module

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	Hirschmann Standard
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	Produced in Neckartenzlingen

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GREYHOUND 1040 Power Supplies

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	Hirschmann Standard
12...14	Production location	-NT	Produced in Neckartenzlingen

Application/Limitation

Location classes:

- EMC class B: The instructions in the User Manual Installation Greyhound Switch must be observed. Equipment for installation outside a distance of 5 m from a standard or a steering magnetic compass.
- Temperature class D: -40°C / 16h

Approval conditions

The Type Approval covers hardware listed under Product description. When the hardware is used in applications to be classed by DNVGL, 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 DNVGL 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 GL 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 DNVGL for evaluation and approval. Major changes in the software are to be approved before being installed in the computer.

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Type Approval documentation

See ANNEX

Place of Production

See ANNEX

Tests carried out

Applicable tests according to Class Guideline DNVGL-CG-0339, Edition November 2015.

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