DNV·GL

Certificate No:
TAA000012Y

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Network and Communication Components

with type designation(s)
MICE Switch Power MSP30/32 and Media Modules MSM20/24/40/42

Issued to
Hirschmann Automation and Control GmbH
Neckartenzlingen, Germany

is found to comply with
DNV GL rules for classification – Ships

Application :

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

Temperature	**B**
Humidity	**B**
Vibration	**A/B***
EMC	**B**
Enclosure	**Required protection according to DNVGL Rules shall be applied upon installation onboard**

*** See Application/Limitation**

Issued at **Hamburg** on **2017-06-14**
This Certificate is valid until **2018-08-25**.
DNV GL local station: **Augsburg**

Approval Engineer: **Heinz Scheffler**

for **DNV GL**

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 **MSP30/32** devices support switched ETHERNET networks that conform to the IEEE 802.3 standard. The devices are mounted by snapping them onto the DIN rail.
Devices with customization = HX or MX: wall mounting installation.

The product designation of the device is made from combining the desired product characteristics in accordance with the following structure / nomenclature

Nomenclature MSP

Position	Characteristic	Characteristic value	Description
1 … 3	Product	MSP	MICE Switch Power
4	Data rate	3	10/100 Mbit/s ports 10/100/1000 Mbit/s ports
5	Hardware type	0 2	Standard PoE or PoE+ capable
6	(hypen)	-	
7 … 8	Number of 10/100 Mbit/s ports	08 16 24	8 * 10/100Mbit/s Ethernet ports 16 * 10/100Mbit/s Ethernet ports 24 * 10/100Mbit/s Ethernet ports
9 … 10	Number of 10/100/1000 Mbit/sports	04	4 * 10/100/1000Mbit/s Ethernet ports
11	Number of 10/100/1000/10000 Mbit/s ports	0	0 * 10/100/1000/10000 Mbit/s Ethernet ports
12	Temperature range	S T E	Standard 0°C … +60°C Extended -40°C … +70°C Extended with conformal coating 40°C+70°C
13	Voltage range	C P	24 … 48 VDC PoE: 48 VDC, PoE+: 54 VDC
14 … 15	Approvals / Declarations	Z9 XX	CE, FCC, EN61131, EN60950-1 Any letter, depending on approvals and/or declarations
16 … 17	Software packages	XX	Any letter, depending on SW package
18 … 19	Customization	HH HX MX	Hirschmann Standard Hirschmann Extreme Condition MAN Extreme Condition
20	Software configuration	X	Any letter, depending on SW configuration
21 … 22	Software level	2A	HiOS Layer 2 Advanced

23 … 27	Software version	3A 02.x 03.x 04.x 05.x 06.x	HiOS Layer 3 Advanced SW version 02.x SW version 03.x SW version 04.x SW version 05.x SW version 06.x
28 … 29	Maintenance	XX	Any letter, depending on maintenance

The **MSM20/24/40/42** media modules support the option to choose various media to connect terminal devices and other infrastructure components.
The devices are mounted by snapping them onto the DIN rail.
Devices with customization = HX or MX: wall mounting installation.

Nomenclature MSM

Position	Characteristict	Characteristic value	Description
1 … 3	Produc	MSM	MICE Switch Media Modul
4	Data rate	2 4	10/100 Mbit/s ports 10/100/1000 Mbit/s ports
5	Hardware type	0 2 4	Standard PoE or PoE+ capable I/O capable
6	(hypen)	-	
7 … 8	Port 1	T1 T5 M2 M4 S2 S4 L2 G2 C1 IO 99	Twisted Pair (TX) / RJ45 Twisted Pair (TX) / M12 Multimode FX DSC (100 Mbit/s only) Multimode FX ST (100 Mbit/s only) Singlemode FX DSC (100 Mbit/s only) Singlemode FX ST (100 Mbit/s only) Singlemode Long Haul FX DSC Singlemode Long Haul FX DSC 200km (100 Mbit/s only) Combo port: Twiste Pair (TX) / RJ45 and Fiber Optic SFP Cage Digital Input / output Empty
9 … 10	Port 2	…	Same as position 7 … 8
11 … 12	Port 3	…	Same as position 7 … 8
13 … 14	Port 4	…	Same as position 7 … 8
15	Temperature range	S T E	Standard 0°C … +60°C Extended -40°C … +70°C Extended with conformal coating -40°c … +70°C

16 … 17	Certificates and declarations b	Z9 XX	CE, FCC, EN61131, EN60950-1 Any letter, depending on approvals and/or declarations
18 … 19	Customization	HH HX MX	Hirschmann Standard Hirschmann Extreme Condition Only valid with Port T5 and MSP Backplane MAN Extreme Condition
20	Hardware configuration	9	Only valid with Port T5 and MSP Backplane No FPGA
21	Software configuration	E	Entry, without configuration
22 … 26	Software version	99.9	No software
27 … 28	Maintenance	99	No maintenance version

Application/Limitation

High vibration strain, class B

- MSP 30/32: Customization = HX or MX
- MSM 20/40: Port 1…4 = T5 and Customization = HX or MX

The installation requirements for naval applications are to be observed.

Approval conditions

The Type Approval covers hardware listed under Product description. When the hardware is used in applications to be classed by DNV GL, 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 GL Rules for Ships Pt.4 Ch.9 Control and Monitoring Systems.

Type Approval documentation

Test reports: TRP_95311011_PS01_1v1 (21.08.13); TRP_95311011_PE01_1v0 (08.03.13); TRP_95311011_S01_1v0 (11.03.13); TRP_95311011_EMC01_2v0 (19.07.13); TRP_95311011_EMC02_1v0 (10.07.13); TRP_95314005_PE01_1v0 (28.10.14); TRP_95314005_EMC01_1v0 (28.10.14); TRP_95314005_EMC02_1v0 (24.11.14); 067e/13 (28.02.13); 536e/14 (29.0.14); 207e/17 (1105.2017).
Documents: Installation MSP30/32 (Release 08, 08/2015); Installation MSM20/24/40/42 (release 08, 08/2015); Module documentation MSM_M12_Module (M12 arrangement RJ45) (07.07.14); Difference MSP Backplanes Original (0.7g) and Rugged version (4g) (11.07.14); MSP Part list 000181550DNR rev.0, MSM Part list no. 000181552DNR rev.0; SVD HiOS 06.1.02 Version 1v1 (06.02.2017); C-Sample Test Report HiOS 06.1.02 (06.02.2017).

Tests carried out

Applicable tests according to class guideline DNVGL-CG-0339, November 2016.

Marking of product

The products to be marked with:

- Model 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