

TYPE APPROVAL CERTIFICATE

Certificate No:
TAA00000XC
Revision No:
5

This is to certify:

That the **Network and Communication Components**

with type designation(s)
Industrial Ethernet Rail Switch, SPIDER Premium Line

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 **2022-04-19**

This Certificate is valid until **2027-04-18**.

DNV local station: **Augsburg**

Approval Engineer: **Heinz Scheffler**



for **DNV**

Digitally Signed By: Papanuskas, Joannis
Location: DNV GL SE Hamburg, Germany

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.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to 300,000 USD.



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.

Item	Characteristic	Characteristic value	Description
1...9	Product	SPIDER-PL	SPIDER Premium Line
10	(hyphen)	-	
11 (a)	Data rate	2 3 4	Fast Ethernet Fast / Gigabit Ethernet Gigabit Ethernet
12	Power over Ethernet (PoE)	0	without PoE support
13	(hyphen)	-	
14...17	Number Twisted pair ports	01T1 04T1 05T1 06T1 07T1 08T1 16T1 24T1	1 x Twisted-Pair, RJ45 4 x Twisted-Pair, RJ45 5 x Twisted-Pair, RJ45 6 x Twisted-Pair, RJ45 7 x Twisted-Pair, RJ45 8 x Twisted-Pair, RJ45 16 x Twisted-Pair, RJ45 24 x Twisted-Pair, RJ45
18...19	Optical fiber port 1	M2 S2 M4 O6 Z6 99	DSC multimode socket for 100 Mbit/s F/O connections DSC singlemode socket for 100 Mbit/s F/O connections ST multimode socket for 100 Mbit/s F/O connections SFP slot for 100/1000 Mbit/s F/O connections SFP slot for 100 Mbit/s F/O connections without
20...21	Optical fiber port 2	M2 S2 Z6 99	DSC multimode socket for 100 Mbit/s F/O connections DSC singlemode socket for 100 Mbit/s F/O connections SFP slot for 100 Mbit/s F/O connections without
22...23	Optical fiber port 3	Z6 99	SFP slot for 100 Mbit/s F/O connections without
24	Temperature range	T E	Extended -40 °C ... +70 °C, Derating to be observed Extended with Conformal Coating -40 °C ... +70 °C
25	Certificates and declarations		Not relevant for this certificate
27...28	Customer-specific version	HH HK	Hirschmann standard Voltage terminal with spring
29...30	Configuration	HH HV	Hirschmann standard Extended voltage range (48 V DC, 24 V AC)

The device is for mounting on a 35 mm DIN rail in accordance with DIN EN 60715.

Application/Limitation

Location classes Temperature D: -40°C / 16h tested

Derating: For device variant SPIDER-PL-20-06T1Z6Z6Z6..., the maximum permitted ambient air temperature has to be reduced to 60 °C

EMC: 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 DNVGL for evaluation and approval. Major changes in the software are to be approved before being installed in the computer.

Type Approval documentation

See ANNEX

Tests carried out

Applicable tests according to Class Guideline DNV-CG-0339, Edition August 2021.

Place of manufacture

See ANNEX

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