



Certificate no.:
TAA00003G2

TYPE APPROVAL CERTIFICATE

This is to certify:

that the **460 Network Components**

with type designation(s)
LAN24CH

issued to

Veinland GmbH
Seddiner See, Brandenburg, Germany

is found to comply with

DNV rules for classification – Ships, offshore units, and high speed and light craft
IMO Res. A.694(17) General requirements for shipborne radio equipment forming part of the global maritime distress and safety system (GMDSS) and for electronic navigational aids
DNV class programme DNV-CP-0203 – Type approval – Electronic and programmable equipment and systems

Application:

Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV. It fulfills the requirements of IEC 60945 (2002) for protected equipment and those for 460-switches and 460-forwarders of IEC 61162-460 (2024).

Temperature	A (-15...55 °C)
Humidity	Test levels acc. to IEC 60945
Vibration	A
EMC	B
Enclosure	IP 20

Issued at **Hamburg** on **2024-12-13**

This Certificate is valid until **2026-12-12**.

for **DNV**

DNV local unit: **Hamburg – CMC North/East**

Approval Engineer: **Jörg Rebel**

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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 USD 300 000.

Product description

Technical data:

- 2 x galvanic isolated power supply 24V DC
- 24 Ethernet Ports 1 Gbit
- 2 x SFP Port (optional module)
- 1 x relays (NO/NC)
- 2 x digital input
- 19" rack mounting

Layer 2 Switching

- Push/pop up to two VLAN tags
- Policing with storm control and MC/BC protection
- RSTP and MSTP support
- Link aggregation (IEEE 802.3ad)
- 8 priorities and 8 CoS queues per port with strict or Multistage TCAM engine
- 802.1Q VLAN switch with 8K MACs and 4K VLANs
- IPv4/IPv6 multicast
- Audio and video bridging (AVB)
- Round robin scheduling: VID, MAC/IP addresses, IPv4/IPv6 DSCP, and UDP/TCP ports and ranges, both ingress and egress directions control

Firmware version: 1.5.x

Application/Limitation

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/Offshore Standards Pt.4 Ch.9 Control and Monitoring Systems.

Product certificate

Each delivery of the application system is to be certified according to Pt.4 Ch.9 Sec.1. The certification test is to be performed at the manufacturer of the application system according to an approved test program before the system is shipped to the yard. 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 if 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

DNV No.	Document ID	Rev.	Description
8	man_LAN24CH_Ethernet_Switch_Forwarder_v1.2_eng	V1.2	Manual: Technical documentation for LAN24CH Ethernet Switch and/or Forwarder
7	N0590-24	1.0	Report: Veinland, Tests according to IEC 61162-460 Ed.3 (2024)
6	919	2015-09-23	Certificate: BSH, Compass safe distance according to IEC 60945, 11.2
5	415.220.3	2015-08-31	Report: CEcert, EMC tests according to IEC 60945, 9 and 10
4		2016-04-02	Statement: NOMATRONICS, Corrosion waiver acc. to IEC 60945, 8.12
3	415.220.1	2015-09-09	Report: CEcert, Environmental tests according to IEC 60945, 8.7
2	415.220.2	2025-09-09	Report: CEcert, Environmental tests according to IEC 60945, 8.2 to 8.4
1	9065-16-19412-174-460	1.04.02	Report: Tests acc. to IEC 61162-460 Ed.1 (2015)

Tests carried out

- Environmental and EMC testing: IEC 60945 (2002) incl. Corrigendum 1 (2008) and DNV-CG-0339 (2021-08)
- Cyber security testing: IEC 61162-460 (2024)

Marking of product

The products to be marked with:

- manufacturer name
- model name
- serial number
- compass safe distance (at least, if intended for installation on the bridge)

Periodical assessment

This certificate is only valid if required periodical assessments are carried out with satisfactory results. To check the validity of this certificate, please look it up in <https://approvalfinder.dnv.com>.

END OF CERTIFICATE