

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Network and Communication Components**with type designation(s)
SEN-9648PM-24V, INS-8408AM, INS-840GM

Issued to

Volktek Corporation
New Taipei City, Taiwanis 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.**

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

Issued at **Hamburg** on **2020-11-23**This Certificate is valid until **2025-11-22**.for **DNV GL**DNV GL local station: **Kaohsiung**Approval Engineer: **Didier Girardin**

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 GL AS, its parent companies and subsidiaries as well as their officers, directors and employees ("DNV GL") 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

Industrial Ethernet Switch conform to the IEEE 802.3 standard

SEN-9648PM-24V L2+ Managed	
	8 x 10/100/1000BASE-T (PoE RJ45)
Ports	4 x Gigabit SFP Slots
	1 x RJ45 Console Port
	1 x USB Port
DIP Switch	Primary/Redundant Power Drop Alarm setting
LED Panel	PWR, RPS, ALM, POST, PoE, 1000, LNK/ACT

INS-8408AM Unmanaged Industrial Ethernet Switch	
Ports	8 x 10/100/1000BASE-T (RJ45)
Connectors	One removable 6-pin terminal block

INS-840GM Unmanaged Industrial Ethernet Switch	
Ports	16 x 10/100/1000BASE-T (RJ45)
Connectors	One removable 6-pin terminal block

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 classification of ships Pt.4 Ch.9 Control and monitoring systems.

Application/Limitation

Each delivery to be provided with installation instruction or later approved version including safe distance to compass and communication cable shielded type.

Compass safe distance

	SEN-9648PM-24V	INS-8408AM	INS-840GM
Steering:	300 mm	250 mm	250 mm
Standard:	400 mm	400 mm	400 mm

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

Place of Production

See ANNEX

Tests carried out

Applicable tests according to class guideline DNVGL-CG-0339 December 2019; IACS E10 Rev.7; IEC 60945 (2002) (Compass safe distance and Acoustic test)



Job Id: **262.1-031766-1**
Certificate No: **TAA00002WV**

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Marking of product

The products to be marked with:

- manufacturer name
- type number
- serial number
- clearly marked with the minimum safe distance at which it may be mounted from Standard and/or Steering compass

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



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ANNEX

Type Approval documentation (hidden)
Place of Production (hidden)