DNV·GL

TYPE APPROVAL CERTIFICATE

Certificate No:
TAA00002H8
Revision No:
2

This is to certify:

That the DC - Isolation Amplifier

with type designation(s)
VariTrans P 150 X Y1, VariTrans A 260 X Y1

Issued to
Knick Elektronische Messgeräte GmbH & Co. KG
Berlin, 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	**B**
Humidity	**B**
Vibration	**B**
EMC	**B**
Enclosure	**A**

Issued at **Hamburg** on **2021-04-06**

This Certificate is valid until **2024-10-21**.
DNV GL local station: **Magdeburg**

Approval Engineer: **Dariusz Lesniewski**

for **DNV GL**
Digitally Signed By: Rinkel, Marco
Location: DNV GL SE Hamburg, Germany
Signing Date: 08.04.2021 , on behalf of

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.

Job Id: **262.1-031530-2**
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Product description

DC - Isolation Amplifier, which isolates/converts standard input and output signals:
0 - 20 mA or 4 - 20 mA or 0 - 10 V
Depending on model, input and output signal ranges are permanently set or calibrated ranges can be selected by means of DIP switches.
Fine-adjusting is not required for the models with switch selection. Signal transmission is linear.
In the type designation the digit "X" may be 00, 16, 17, 18, 26, 28, 36, 37 or 38 to denote signal conversion capabilities.
The digit "Y" may be H or F to denote type of screw terminals: Type H 1 is connected by means of pluggable screw clamp terminals, type F 1 by means of fixed screw clamp terminals.
Supply: AC 22 - 230 V, 48…62 Hz, ca. 2 VA, OVC II
DC 22 (24) - 230 V, ca. 1 W, OVC II

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.

Type Approval documentation

Test documents: CB-test report Ref. No. E 9911046 E01, dated 15. July 1999
TÜV test protocol No. 945 / U 744 / 99, dated 30.08.99
Knick EMC test protocols, dated 31.05.99, 21. Dec. 98 and EM41022A.DOC, dated 22.10.04
Test Report: ELO TX140910B
Test Report: Eurofins Product Service No. G0M-2101-9563-EE01GEN-V01, dated 2021-03-02
Type approval assessment report issued at Magdeburg on 2019-09-10

Tests carried out

Applicable tests according to class guideline DNVGL-CG-0339, December 2019.

Marking of product

The products to be marked with:
- manufacturer name
- model name
- serial number
- power supply ratings

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