

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Position Transmitter

with type designation(s)
Vert-X 515x CANopen

Issued to

Contelec AG
Biel BE, Switzerland

is found to comply with

DNV GL rules for classification – Ships

DNV GL rules for classification – High speed and light craft

DNV GL offshore standards

Application :

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

Temperature D
Humidity B
Vibration B
EMC B
Enclosure B / IP67

Issued at **Hamburg** on **2017-01-27**

This Certificate is valid until **2022-01-26**.

DNV GL local station: **Augsburg**

for **DNV GL**

Approval Engineer: **Heinz Scheffler**

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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.



Product description

Rotary Encoder model / Vert-X 515x CANopen.

- Power supply: 18...31.2 VDC
- Angular range: 0...360°
- Independent linearity (angle): $\pm 0.1\%$
- Degree of protection: IP67
- CANopen protocol: DS-301 V4.02, DS-406 V3.1, encoderclass C2
- CANopen special features: Speed, Autostart, Zero-Set
- Software Version: SV1.3.3

Application/Limitation

Attached cable (with PVC insulation) as a part of the supplied equipment will be only accepted for short cable < 6 m.

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

Type Approval documentation

Test report: E112540E1, 2011-10-10; U112540E1, 2011-08-01; PA2011/038, 2011-09-27

Documents: Drawing 18380E_MB, Rev.E; Drawing 18382D_ZZ, Rev.D;; Cable Helukabel_TRONIC_CY_en, 2011-08-17; Specification Requirements_100704_v1.2, CANopen_Specs_100704_v7en

Tests carried out

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

Marking of product

- Manufacturer name: Contelec
- Model name: Vert-X 5151 836 139 901
- Manufacturing 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 at least every second year and at renewal of this certificate.

END OF CERTIFICATE