

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Pressure Transmitter**with type designation(s)
EPS

Issued to

Eltorque AS
Vanvikan, Norway

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 D****Humidity B****Vibration A****EMC B****Enclosure Top mounting type: D / IP68 (30 m / 100 h),
Side mounting type: B / IP67.**Issued at **Høvik** on **2019-10-14**This Certificate is valid until **2024-10-13**.DNV GL local station: **Trondheim**for **DNV GL**Approval Engineer: **Ståle Sneen**

Trond Sjøvåg
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

ELTORQUE pressure transmitter model EPS for level gauging applications.

Naming convention: EPS-a-b-c-d-e-f-g-h, where the following variants are covered by this approval:

- a = N – Normal type
A – Explosion proof type
- b = 1 – Housing material SUS304
2 – Housing material SUS316
3 – Housing material SUS316L (required for enclosure class D)
- c = 0 – Absolute type
1 – Gauge type
- d = 1 – Top mounting, submersible type (IP68 down to 30 m)
2 – Side mounting, threaded type (IP67)
- e = Measuring range. 1-7 covers models up to 25 bar. 8 is user specified.
- f = Accuracy (1-4)
- g = 1 - 4-20 mA output signal
- h = Mechanical connection (1-4)

example of model name: EPS-N-3-0-1-3-2-1-1

Specifications

Power supply: 24 VDC (nominal)
Output signal: 4-20 mA, 2-wire
Cable type: DQYPYT 5 * 0.2 mm² vented special cable

Place of manufacture

Eltorque Automation (Xiamen) Ltd.
2/F,1# building, No.168, Huizuo Rd, XinYang Industrial Area,
Haicang District, Xiamen City, Fujian Province, China

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

Ex-certification is not covered by this certificate. Application in hazardous area to be approved in each case according to the Rules and Ex-Certification/Special Condition for Safe Use listed in valid Ex-certificate issued by a notified/recognized Certification Body.

Type Approval documentation

Tests carried out

Applicable tests according to class guideline DNVGL-CG-0339, November 2016.
IP68 (30 m submerged for 100 hours) according to IEC 60529.
150% static pressure test (37.5 bar for 2 minutes).

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