DNV·GL

Certificate No:
TAA00002DX

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Position Reference Sensor

with type designation(s)
XPR 100 long-range relative positioning sensor

Issued to
Kongsberg Seatex AS
Trondheim, Norway

is found to comply with
DNV GL rules for classification – Ships, offshore units, and high speed and light craft
IEC 60945 Ed. 4 (2002-08) Maritime navigation and radiocommunication equipment and systems – General requirements – Methods of testing and required test results

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	**C / IP66**

Issued at **Høvik** on **2019-08-22**
This Certificate is valid until **2021-08-21**.
DNV GL local station: **Trondheim**

Approval Engineer: **Aleks Karlsen**

for **DNV GL**

Jan Tore Grimsrud
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.

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Product description

This sertificate covers the XPR 100 sensor, power supply, and data and power cable intended for use with the XPR 100 long-range relative positioning system.

Component	**Article no:**
Sensor unit	XPR-E-100-Sensor
XPR power and data cable	XPR-C-Cab_5m
XPR power supply	G072-59

Sensor Basis SW release:
SW version: 1.00.xx
FW version: 2.00.xx

Approval conditions

The Type Approval covers hardware and software listed under Product description. When the XPR 100 system 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 Ships Pt.4 Ch.9 Control and Monitoring Systems.

When the type approved software is revised (affecting all future deliveries) DNV GL is to be informed by forwarding updated software version documentation. If the changes are judged to affect functionality for which rule requirements apply a new functional type test may be required and the certificate may have to be renewed to identify the new software version.

Software control
All changes in software are to be recorded as long as the system is in use on board. Documentation of major changes is to be forwarded to DNV GL for evaluation and approval before implemented on board.

Application/Limitation

The XPR 100 sensor unit shall be supplied by Phoenix Contact STEP-PS/1AC/24DC/4.2 (covered by type approval certificate TAA00001YD) or other dedicated, galvanically isolated, type approved instrument power supply.

Type Approval documentation

Tests carried out

Applicable tests according to class guideline DNVGL-CG-0339, November 2016.
Applicable tests according to IACS Unified Requirements E10, Rev. 7.
Applicable tests for exposed equipment according to IEC 60945, 4th edition (2002).
ETSI EN 302 248 V2.1.1, clause no. 6.2 through 6.5.
Performace/functional testing witnessed, ref "Test Plan-XPR type approval with DNV" rev.3 dated 2019-06-13 with results documented in Test Plan XPR100 Type approval, report no. 3630.10, rev. 2.4, dated 2019-07-02.

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

A renewal assessment will be performed at renewal of the certificate.

END OF CERTIFICATE