

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Position Reference System**

with type designation(s)

RangeGuard Sensor Unit, RangeGuard Processing Unit

Issued to

Guidance Marine Ltd.**Leicester, LEICESTERSHIRE, United Kingdom**

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:**

Type	Temperature	Humidity	Vibration	EMC	Enclosure
RangeGuard Sensor Unit	D	B	A	B	IP56
RangeGuard Processing Unit	C	B	A	B	IP20

Issued at **Høvik** on **2017-09-22**This Certificate is valid until **2019-09-21**.for **DNV GL**DNV GL local station: **Manchester**Approval Engineer: **Jens Erling Bråten**

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Odd Magne Nesvåg
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

RangeGuard Monopole targetless radar based position reference system, consisting of the following units:

- Sensor unit
- Processing unit, including power supply

Basis SW release: 1.1.2.x (*)

Application/Limitation

The Type Approval covers hardware and software listed under Product description. When the RangeGuard 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.

(*) Application 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.

Software update notification

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.

Type Approval documentation

Tests carried out

DNVGL-CG-0339 and IEC 60945 ed.4

Marking of product

Guidance Marine, RangeGuard, Part and Serial numbers

Job Id: **262.1-023923-1**
Certificate No: **TAA00001E4**

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