DNV·GL

Certificate No:
TAA000028U

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Peripheral Equipment

with type designation(s)
Wave II monitor series

Issued to
North Invent Norway A/S
Haugesund, 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	**B (tested down to -15°C)**
Humidity	**B**
Vibration	**A**
EMC	**B**
Enclosure	**A**

Issued at **Høvik** on **2019-10-23**
This Certificate is valid until **2024-10-22**.
DNV GL local station: **Norway CMC, West**

Approval Engineer: **Ståle Sneen**

for **DNV GL**

Trond Sjåvåg
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.

© DNV GL 2014. DNV GL and the Horizon Graphic are trademarks of DNV GL AS.

Product description

Wave II monitor series, comprising the following units:

Model no.	Description	Compass safe distance	
		Standard compass	**Steering compass**
WE185	Wave II 18.5” monitors Wave II 18.5" touch monitors Wave II 18.5" Display Units (DIU) Wave II 18.5" hinge (stands) Wave II 18.5" panel mounting kits	190 cm	120 cm
WE190	Wave II 19” monitors Wave II 19" touch monitors Wave II 19" Display Units (DIU) Wave II 19" hinge (stands) Wave II 19" panel mounting kits	190 cm	120 cm
WE215	Wave II 21.5” monitors Wave II 21.5" touch monitors Wave II 21.5" Display Units (DIU) Wave II 21.5" hinge (stands) Wave II 21.5" panel mounting kits	190 cm	120 cm
WE240	Wave II 24” monitors Wave II 24" touch monitors Wave II 24" Display Units (DIU) Wave II 24" hinge (stands) Wave II 24" panel mounting kits	190 cm	120 cm
WE270	Wave II 27” monitors Wave II 27" touch monitors Wave II 27" Display Units (DIU) Wave II 27" hinge (stands) Wave II 27" panel mounting kits	220 cm	145 cm
WE000	Wave II Electronic Units (ELU) Wave II HMI units	190 cm	120 cm
AA213	21.3" OEM monitor	200 cm	130 cm

The Wave II Electronic Units (ELU) include the following interfaces; Up to 2 inputs each of the following: Displayport (incl DDC/CI), DVI (incl DDC/CI), Ethernet, RS422/485, USB A and 1 each of RS232 input, USB B input and DVI output.

The monitors consist of Display Unit (DIU) and Electronics Unit (ELU).

Tested and approved for nominal voltage 115-230 Vac 50 Hz, and 24 Vdc, configured as single AC, single DC, or any combination of the two.

Place of manufacture

GPV Asia (Thailand) Co., Ltd.
834 Moo4, Bangpoo industrial Estate Soi 11, 12
Sukhumvit Road, Praksa, Muang Dis.
Samutprakarn 10280, Thailand

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

Tests carried out

Applicable tests according to class guideline DNVGL-CG-0339, November 2016.
Applicable tests according to IACS Unified Requirements E10, Rev.6.
Applicable tests for protected equipment according to IEC 60945, 4th edition (2002), except for section 8.12 Corrosion (salt mist).

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