DNV·GL

Certificate No:
TAA000006E

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Bridge instrumentation

with type designation(s)
SeaQ HW

Issued to
Vard Electro AS
Tennfjord, Norway

is found to comply with
Det Norske Veritas' Rules for Classification of Ships 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.

This Certificate is valid until **2021-07-14**.

Issued at **Høvik** on **2016-07-15**

for **DNV GL**

DNV GL local station: **Ålesund**

Approval Engineer: **Roger Lauritsen**

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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Job Id: **262.1-020663-1**
Certificate No: **TAA000006E**

Product description

SeaQ HW consists of the following modules:

Component	Article #	Location
Panel PC, 12" touch display	10014493	Protected
SeaQ Bridge CAM-BNWAS Interface Plate (2*24VDC) or	10021510 or	Protected
SeaQ Bridge CAM-BNWAS Interface Plate (24VDC & 230VAC) or	10021511 or	Protected
SeaQ BAM Interface Plate (2*24VDC) or	10014931 or	Protected
SeaQ BAM Interface Plate (24VDC & 230VAC)	10015388	Protected
CAM sounder	10012595	Protected
Reset panel	10012591	Protected
Motion detector	10012593	Protected
BNWAS sounder	10012595	Protected
Alarm panel	10012592	Protected

Application/Limitation

See separate certificates for systems using the hardware described in this certificate.

Type Examination documentation

DNV GL No	Document Ref.	Rev.	Description
49	2011-3477	3	Report: DNV, EMC & Environmental testing BWS
48	2013-3141	1	Report: DNV, EMC & Environmental testing BAM
45	MRA000000N		Certificate: DNV GL, Maritime Panel Computers, PPC-080T-BT-01 PPC-120T-BT-01
44	TAA00000EY		Certificate: DNV GL, Maritime Panel computers PPC-080T-BT-01 PPC-120T-BT-01
41	BSH 939		Certificate: BSH, DC/DC converter
38	GL 18720-11 HH		Certifcate: GL, 1872011 HH, Industrial Ethernet swtiches
27	74008-ASY-13-V2	Rev C	CAM-BNWAS Topology Diagram
23	74008-INSG-21-V2	Rev D	BNWAS Installation Manual
21	74008-INSG-11-V2	Rev D	CAM Installation Manual
16	74008-INSG-12-V2	Rev C	CAM-BNWAS Interconnection Diagram
15	1407615 HH		Certificate: DNV GL, Power unit

DNV GL No	Document Ref.	Rev.	Description
14	1163110 HH		Certificate: DNV GL, I/O unit
13	A-14093		Certificate: DNV GL, I/O unit
12	9476710 HH		Certificate: DNV GL, Power unit
11	4229015 HH		Certificate: DNV GL, Power unit
10	3385306 HH		Certificate: GL, Power unit
9	1872011 HH		Certificate: DNV GL, Network unit
8	BSH 467		Certificate: BSH, IO-unit
7	45248-07 HH		Certificate: GL, Fuse and power rail
6	33853-06 HH		Certificate: GL, Power supply
5	A-12838		Certificate: DNV, Panel PC

Tests carried out

Environmental testing, IEC 60945 (2002), including IEC 60945 Corrigendum 1 (2008).
Serial interface testing, IEC 61162-1 (2010)
Serial interface testing, IEC 61162-2 (1998)
Presentation of Navigation information, IEC 62288 (2014)

Marking of product

The Manufacturer and Type Designation to be applied to the equipment in a clearly visible location and in addition the equipment shall be marked with serial number, safe distance to magnetic compass, power consumption and/or supply voltage

Periodical assessment

Retention surveys are to be carried out annually and not more than 3 months prior to renewal of this certificate.

The scope of the retention survey is to verify that the conditions stipulated for the type examination are complied with and that no significant changes have been made to the production process and/or product specification.