DNV·GL

Certificate No:
**TAA00001CR**

# TYPE APPROVAL CERTIFICATE

## This is to certify:

**That the Water Ingress Detection**

with type designation(s)
**IWS Serials**

Issued to
**Guangzhou Fokstone Automation Company Limited**
**Guangzhou, China**

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.**

| | |
|---|---|
| **Temperature** | **B** |
| **Humidity** | **B** |
| **Vibration** | **A** |
| **EMC** | **B** |
| **Enclosure** [1)] | |

[1)] Required protection according to DNV GL Rules shall be provided upon installation on board

Issued at **Hamburg** on **2017-08-30**
This Certificate is valid until **2022-08-29**.
DNV GL local station: **China South NB**

for **DNV GL**

Approval Engineer: **Didier Girardin**

**Joannis Papanuskas**
**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

Water Ingress Detection System for Bulk Carriers Ships & Single hold cargo Ships
acc. to Solas Regulation XII/12, MSC. 188(79), MSC.134(76), IACS SC180

Water ingress alarm system for cargo holds, closed dry & void spaces and fore peak tanks on bulk carriers, consisting of:
Alarm and Monitoring Panel as Master /Slave Units:

- A2210/RWU JumHo Alarm Unit
- Communication port RS485
- Sound and light Pre and Main Alarm, Sensor Failure, Input Short / Open Circuit Failure, Power Supply Failure
- Safety Barrier NPEXA-3P acc. Eex CNEx 09.2468

Level Sensors

- L20-70D Level Transmitter GL 65289-93HH
- DMP457 Pressure Transmitter GL 24288-04 HH

Software Version: 2.0

## Application/Limitation

The following documentation of the actual application is to be submitted for approval in each case:

- Reference to this Type Approval Certificate
- System block diagram
- Power supply arrangement (may be part of the System block diagram)
- Sensor arrangement and installation (responsibility of installer)

The Type Approval covers hardware listed under Product description.
As long as the units are covered by the Type Approval, a product certificate according to Pt.4 Ch.9 Sec.1 A 202 will not be required. Correct configuration and set up for each delivery to be tested during commissioning after installation.

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 Excertificate issued by a notified/recognized Certification Body

Clause for application software control.
All changes in software are to be recorded as long as the system is in use on board. The records of all changes are to be forwarded to DNV for evaluation and approval. Major changes in the software are to be approved before being installed in the computer.

## Tests carried out

Applicable tests according to Class Guideline DNVGL-CG-0339, Nov 2016

## 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 at least every second year and at renewal of this certificate.

END OF CERTIFICATE