DNV·GL

Certificate No:
TAA00001RM

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Water Ingress Detection

with type designation(s)
SLT-08C & SLT-08D

Issued to
Sealantern Electronics Co., Ltd.
TIANJIN TIANJIN, China

is found to comply with
DNV GL rules for classification – High speed and light craft
DNV GL rules for classification – Ships, offshore units, and high speed and light craft

Application :

Location classes:

Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.

Temperature	**D Control Box: B**
Humidity	**B**
Vibration	**A**
EMC	**B**
Enclosure	**Sensor: C**
	Alarm cabinet: A

Issued at **Hamburg** on **2018-02-26**
This Certificate is valid until **2019-06-30**.
DNV GL local station: **Tianjin**

Approval Engineer: **Marco Rinkel**

for **DNV GL**

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.

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

Product description

Water ingress alarm system for cargo holds on bulk carriers, type SLT-08C WIAS, consisting of:

UNIT	DESIGNATION
Control box	SLT-08C with PLC MELSEC FX1N or PLC MELSEC FX3G-60MR-DS
Barrier wiring box	SLT-08-JB01/02, containing barrier SLT-08C-A02
Level detector	SLT-08C-338W/338D1 (single/double flange type)
Pressure transducer	SLT-08C-B02

Note:
Sensor installation shown on dwg.08C-07-03 only to be used in ballast tanks and dry spaces not intended for cargo.

PLC application software name and version: SWOPC-FXGP/WIN-C V3.00

Water ingress alarm system for cargo holds on bulk carriers, type SLT-08D WIAS, consisting of:

UNIT	DESIGNATION
Alarm Panel & Control box	SLT-08D-02-01 with CPU board SLT-08D-CPU1 and Display board SLT-08D-DP1
Barrier wiring box	SLT-08-JB03, containing barrier SLT-08C-A02 & alarming water level regulator SLT-08D-R1
Level detector	SLT-08C-338W/338D1 (single/double flange type)

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 and software listed under Product description.
The current software numbers and versions are listed in SLT-08C-P01/10-June-2003 "System Software Overview" and the revisions for each software are listed in documents SLT-08C-P01-R/10-June-2003, Software Revision History.

As long as the units are covered by the Type Approval, a product certificate according to Pt.4 Ch.9 Sec.1 2 will not be required. Correct configuration and set up for each delivery to be tested during commissioning after installation.

Equipment for installation outside a distance of 5 m from a standard or a steering magnetic compass.

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.
A Certification of Application Functions may be required for the particular vessel.

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 Ex-certificate issued by a notified/recognized Certification Body.

Type Approval documentation
See ANNEX

Tests carried out
Applicable tests according to DNV Standard for Certification No. 2.4.
Performance testing according to SOLAS Reg.XII/12 (not valid for sensor installation shown on dwg. 08C-07-03).

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

ANNEX
Type Approval documentation
(hidden)