



# DET NORSKE VERITAS

## TYPE APPROVAL CERTIFICATE

CERTIFICATE NO. A-11290  
This Certificate consists of 4 pages

*This is to certify that the*  
**Water Ingress Detection System**

*with type designations*  
**Bulksafe Control Panel; MMS900 Level Switch**

*Manufactured by*  
**Martek Marine Ltd.**  
ROTHERHAM, United Kingdom

*is found to comply with*  
Det Norske Veritas' Rules for Classification of Ships, High Speed & Light Craft and  
Det Norske Veritas' Offshore Standards


*Application*  
Location classes:

Type	Temperature	Humidity	Vibration	EMC	Enclosure
Bulksafe Control Panel	C	B	A	B	
MMS900 Level Switch	C	B	A	B	D

*Place and date*  
Høvik, 2009-05-11  
for DET NORSKE VERITAS AS



*This Certificate is valid until*  
2011-06-30

*PP:*   
Odd Magne Nesvåg  
Head of Section

Local Office  
DNV Sheffield

  
Andrzej Gdaniec  
Surveyor *SNW*

**Notice: 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.**

If any person suffers loss or damage which is proved to have been caused by any negligent act or omission of Det Norske Veritas, then Det Norske Veritas shall pay compensation to such person for his proved direct loss or damage. However, the compensation shall not exceed an amount equal to ten times the fee charged for the service in question, provided that the maximum compensation shall never exceed USD 2 million. In this provision "Det Norske Veritas" shall mean the Foundation Det Norske Veritas as well as all its subsidiaries, directors, officers, employees, agents and any other acting on behalf of Det Norske Veritas.



Cert. No.: A-11290  
File No.: 866.40  
Job Id.: 262.1-007533-1

## Product description

Water ingress alarm system for cargo holds on bulk carriers, consisting of:

Bulksafe Control Panel  
MTL7700 Series Shunt Zener Diode Barriers (IIC)  
MMS900 Level Switch  
Application software/firmware version: V 1.5.

## 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.

Ex installations 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.

Ex-certification is not covered by this certificate and the following paragraph, which is for information only, is based on information received from the manufacturer, but not verified by DNV.

Information on Ex-Certification received from manufacturer – Not verified by DNV		
Equipment	Certified	Certificate No.
MTL7700	EEx ia IIC	BAS No. Ex 01E2219

Sensors are regarded as simple apparatus.

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.

### 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.



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## **Type Approval documentation**

Installation, Operation and Maintenance Manual BULKSAFE by Martek Marine Ltd

### Test reports:

EMC Testing of a MM6000 4-Bulksafe Control Panel, Report No BO611167/4, issued 2003-08

TUV Compass Safe Distance test certificate OO612262/001, issued 2004-02-04

TUV Damp Heat, Cyclic test certificate SX611868-002 issue 2, issued 2004-02-23

TUV High Temperature test certificate SX611868-001, issued 2003-10-17

TUV High Temperature test certificate SX611167-001, issued 2003-08-21

TUV Low Temperature test certificate SX611868-003 issue 2, issued 2004-02-23

TUV Inclination test certificate JP611807/001, issued 2003-09-25

TUV Resonance Search test certificate SX611167-005, issued 2003-08-21

TUV Pressurised immersion test certificate SX611624-001, issued 2003-09-25

### Ex certificate:

BAS No. Ex 01E2219 issued 2001-08-08 (covers zener barriers MTL7700)

### Tests acc to IMO Res.MSC 145(77):

DNV Technical Report No. TAA3976 dated 2004-01-30

DNV Sheffield Certificate retention survey report for A-9963, dated 2009-05-07.

## **Tests carried out**

Applicable tests according to Standard for Certification No. 2.4.

Performance testing according to SOLAS Reg. XII/12 and IACS SC180.

## **Certificate retention survey**

The scope of the retention/renewal survey 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 survey 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



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- 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

Retention survey is to be performed at least every second year and at renewal of this certificate.

END OF CERTIFICATE