



DET NORSKE VERITAS

TYPE APPROVAL CERTIFICATE

CERTIFICATE NO. A-10745
This Certificate consists of 4 pages

This is to certify that the
Water Ingress Detection

with type designations
BulkSafe Alarm Panel IWT 4000 Series
Level Transducer 200/260 & 360 series
Level Transmitter RT 168
as specified on page 2

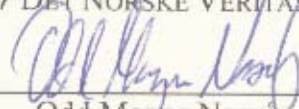
Manufactured by
PSM Instrumentation Ltd
HAYWARDS HEATH RH16 1TW, United Kingdom

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 Alarm Panel IWT 4000 Series	A	B	A	B	
Level Transducer 200/260 & 360 series	D	B	A	A	D
Level Transmitter RT 168	C	B	A	A	D

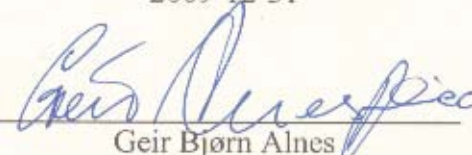
Place and date
Høvik, 2008-04-28
for DET NORSKE VERITAS AS


Odd Magne Nesvåg
Head of Section



Local Office
DNV Southampton

This Certificate is valid until
2009-12-31


Geir Bjørn Alnes
Surveyor

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-10745
File No.: 866.40
Job Id.: 262.1-004713-1

Product description

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

Alarm Panel IWT 4000 series
Transducer 200/260 and 360 series
Transmitter T168
MTL 7787S+ zener barriers
Application software/firmware versions: V0.11

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.

Information on Ex-Certification received from manufacturer – Not verified by DNV		
Equipment	Certified	Certificate No.
MTL7700 series Zener Barriers	Ⓢ II (1) GD EEx ia IIC, (Ta: -20°C to +60°C)	EECS BAS01ATEX7217 and BAS99ATEX7285 Basefa BAS01ATEX7202
Pressure Transmitter Type RT168	Ⓢ II 1 G EEx ia IIC, T5 (Ta: -40°C to +55°C)	Intertek ETL SEMKO ITS03ATEX21770X
Pressure Sensor Series 200/300	Ⓢ II 1 G EEx ia IIC, T6 (Ta: -40°C to +55°C)	Intertek ETL SEMKO ITS03ATEX21771

Maximum number of cargo/ballast tanks is 24

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.



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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.

Type Approval documentation

Lloyds Register Type Approval Report for SC180, dated 05.04.04.

Intertek EMC Test Report, Report No.: 0301268 issue: 1, dated February 2004.

Mariner Systems Ltd Environmental Test File No. TL720, dated 17 December 2003.

PSM Instrumentation SC 180 2.1.1.1 20 day submersion test.

PSM Instrumentation bulksafe system sales drawings S-001192-IWT-SYS, SPR088-028-GA, SPR088-029-GA, SPR088-030-GA and SPR088-032-GA.

PSM Instrumentation BulkSafe User Manual, Issue A date.27/1-2004

Ex Certificates:

ITS03ATEX21770X and ITS03ATEX21771, dated 2004-03-09 (covers Pressure Transmitter RT168 and Pressure Sensor series200/300)

BAS99ATEX7285 incl. supplementary certificates BAS99ATEX7285/1 and 2, dated 2000-04-17, 2001-06-21 and 2001-11-21 (covers MTL 7000 series zener barriers)

BAS01ATEX7202 incl. supplementary certificate BAS01ATEX7202/1, dated 2001-07-20 and 2003-04-25 (covers MTL700 series zener barriers)

BAS01ATEX7217 incl. supplementary certificate BAS01ATEX7217/1 to 5, dated 2001-08-08, 2001-12-04, 2002-03-28, 2002-07-09, 2002-09-03 and 2002-10-29 (covers 7700 series zener barriers.)

Retention Survey Report LDN-07-072-2, dated 2007-08-14



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Tests carried out

Applicable tests acc. to S.f.C.2.4
Performance testing according to SOLAS XII Reg. 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
- 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