

DET NORSKE VERITAS

TYPE APPROVAL CERTIFICATE

CERTIFICATE NO. A-10504
This Certificate consists of 3 pages

This is to certify that the
Test and Calibration Equipment

with type designation
SHERLOG TA ultrasonic leak detector

See page 2

Manufactured by
SDT International
BRUSSEL, Belgium

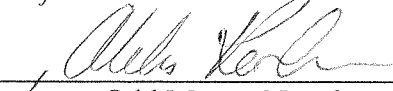
is found to comply with
Det Norske Veritas' Rules for Classification of Ships, High Speed & Light Craft and
Det Norske Veritas' Offshore Standards

Application
The instrument is only approved as portable test instrument.

Place and date
Høvik, 2007-10-25
for DET NORSKE VERITAS AS



This Certificate is valid until
2011-06-30

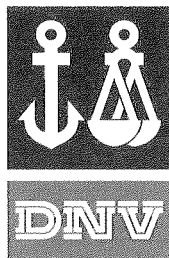

for Odd Magne Nesvåg
Head of Section

Local Office
DNV Antwerp


Ståle Sneen
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-10504
File No.: 890.90
Job ID: 262.1-004302-1

Product description

SHERLOG portable ultrasonic leakage detector for tightness testing of hatch covers and ro-ro equipment for ships and offshore units in accordance with IACS UR Z17 rev 6.

Comprising:

- An electronic wave generator producing a uniformly distributed omni-directional ultrasound field.
- A microprocessor based handheld ultrasonic detection unit connected to special adapter probes, allowing tightness measurements in dBuV values, memorising of data, and in a specific routine for hatch cover tightness testing; logging and downloading to a PC for appropriate reporting.

Approval conditions

The Type Approval covers hardware listed under Product description. When the hardware is used in applications to be classed by DNV, documentation for the actual application is to be submitted for approval by the manufacturer of the application system in each case. Reference is made to DNV Rules for Ships Pt.4 Ch.9 Control and Monitoring Systems.

The instrument to be used in accordance with:

- DNV Certification Notes 2.9/ Approval Programme 403, and after completion of:
- "The SDT-IMCS New Generic Training Program for Service Suppliers Engaged in Onboard Ultrasonic Tightness Testing", dated: September 2002, or similar relevant Training Program

The equipment shall possess a valid Calibration Certificate.

Type Approval documentation

- Ring binder, containing full description of the instrument and components as:
 - Brochures
 - Third party approval documentation
 - Test reports: ANPI/NVBB ELC/EMC/227, 230, 233 and 244
 - Certificate of calibration
 - Parts lists/drawings
- DNV Statement "Tightness Test of Hatches with Ultrasonic Equipment" dated 94-11-21
- The SDT-IMCS New Generic Training Program for Service Suppliers Engaged in Onboard Ultrasonic Tightness Testing.
- DNV Antwerp Certificate retention survey report for A-8647 dated 2007-10-15.



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Tests carried out

Drop test, ref. report NV ANT 02-203 dated 02-09-25

Tests carried out for other third party societies (Humidity/ high temp. test, EMC test, Cold test (-15 Deg.C), IP test).

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