



# DET NORSKE VERITAS

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## TYPE EXAMINATION CERTIFICATE

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**CERTIFICATE NO. A-12949**  
This Certificate consists of 3 pages

*This is to certify that the*  
**ULTRASONIC WIND SENSOR**

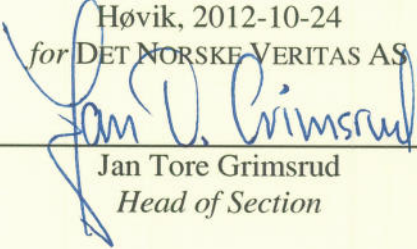
*with type designation(s)*  
**DEIF ULTRASONIC WIND MEASURING SYSTEM WSS**

*Manufactured by*  
**DEIF A/S**  
SKIVE, DENMARK

*is found to comply with*  
IEC 60945 Ed. 4 (2002-08) Maritime navigation and radiocommunication equipment and systems - General requirements - Methods of testing and required test results

*Place and date*  
Høvik, 2012-10-24

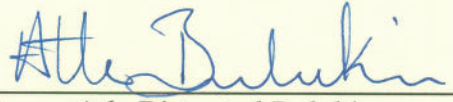
for DET NORSKE VERITAS AS

  
Jan Tore Grimsrud  
Head of Section

Local Office  
Aalborg



*This Certificate is valid until*  
2016-12-31

  
Atle Bjørnstad Bulukin  
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 Examination 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-12949  
Case No.: 262.1-006532-2  
File No.: 840.50

### Product description

The WSS is produced on behalf of DEIF A/S by Vaisala Oyj, Helsinki, Finland and consists of the following components:

Wind sensor

### Application/Limitation

The WSS shall be installed and checked/tested in accordance to manufacturer Installation Instructions

No type tests have been witnessed by DNV. See appendix for more information on performed tests.

### Type Approval documentation

See appendix.

### Tests carried out

Performance- and environmental tests in accordance to IEC 60945 (2002)

### Marking of product

The product shall be marked with information identifying:

- Manufacturer: DEIF A/S
- Type/Model: WSS
- Serial number

### Certificate retention survey

The scope of the retention/renewal survey is to verify that the conditions stipulated for the type examination are complied with and that no alterations are made to the product design or choice of systems, software versions, components and/or materials.

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







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## APPENDIX REV. NO. 1 (Page 1 of 1)

### Product description

WSS consists of the following components:

Wind sensor

### Type Examination documentation

- Application for Type Approval (2008-12-03)
- Letter of permission regarding DEIF A/S application for TA Certificate for WSS, on behalf of Vaisala Oyj (2008-12-01)
- Type approval survey report (2008-12-02)
- IEC 60945 – Dry heat test (Deif, 2008-06-20)
- IEC 60945 – Damp heat test (Deif, 2008-06-19)
- IEC 60945 – Low temperature test (Deif, 2008-06-13)
- IEC 60945 – Vibration test (Deif, 2008-06-26)
- IEC 60945 – Rain test (Danfoss, 2009-01-20)
- IEC 60945 – Salt mist test (Probus, 2007-03-08)
- IEC 60945 – Extreme/Excessive power supply tests (Deif, 2008-06-10)
- IEC 60945 – Conducted emissions test (Deif, 2008-06-26)
- IEC 60945 – Radiated emissions test (Delta, 2008-06-12)
- IEC 60945 – Immunity to conducted/radiated radio freq. interference (Deif, 2008-06-24)
- IEC 60945 – Immunity to fast transients on a.c. power, signal and control lines (Deif, 2008-06-09)
- IEC 60945 – Immunity to surges a.c. power lines (Deif, 2008-06-11)
- IEC 60945 – Immunity to power supply short-term variation (Deif, 2008-06-09)
- IEC 60945 – Immunity to power supply failure (Deif, 2009-01-15)
- IEC 60945 – Immunity to electrostatic discharge (Deif, 2006-06-17)
- IEC 60945 – Compass safe distance test (Delta, dd)

Place and date  
HØVIK, 2012-10-24

Atle Bulukin

END OF CERTIFICATE

