



# DET NORSKE VERITAS

## TYPE APPROVAL CERTIFICATE

CERTIFICATE NO. A-10477  
This Certificate consists of 3 pages

*This is to certify that the*  
**Level Transmitter**  
*with type designations*  
**Optiwave 8300 C**  
**Optiflex 4300 C**

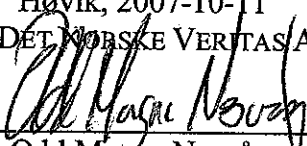
*Holder of certificate:*  
**KROHNE Skarpenord**  
BREVIK, Norway

*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:

Temperature	D
Humidity	B
Vibration	A
EMC	B
Enclosure	C

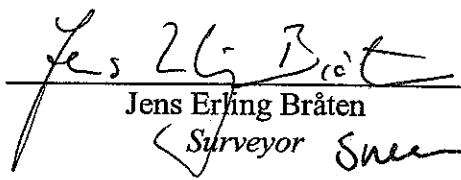
*Place and date*  
Høvik, 2007-10-11  
for DET NORSKE VERITAS AS

  
Odd Magne Nesvåg  
Head of Section



*Local Office*  
DNV Sandefjord

*This Certificate is valid until*  
2011-12-31

  
Jens Erling Bråten

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-10477  
File No.: 892.30  
Job ID.: 262.1-002241-1

### **Product description**

- Optiwave 8300 C radar level meter with steel housing.
- Optiflex 4300 C guided radar level meter with steel housing.

### **Manufactured by**

Krohne SAS, Les Ors, 26103 ROMANS Cedex, France.

### **Application/Limitation**

Note that for the Optiflex 4300 C, the wire must be mounted with some slack to avoid resonance frequencies to occur, which could cause stress and possible damage at the point where the wire is connected to the instrument. Manufacturers guidelines for mounting is to be complied with.

### **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.

### **Type Approval documentation**

- DNV Technical Report No. 2006-3573, Revision No.01
- DNV Technical Report No. 2007-3247, Revision No.01
- DNV Technical Report No. 2006-3445, Revision No.02
- Krohne Optiflex 1300C Handbook, doc.No. 7.02534.22.00 dated 2005-08
- Krohne Optiwave 7300C Handbook, doc.No. 7.02535.22.00 dated 2005-08
- Krohne Skarpenord, Description of test equipment for Type Approval, version 0.2



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### Tests carried out

Applicable tests according to Standard for Certification No. 2.4 April 2006

### 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