



TYPE APPROVAL CERTIFICATE
No. ELE471806CS



This is to certify that the product below is found to be in compliance with the applicable requirement of the RINA type approval system.

<i>Description</i>	Microwave sensor for continuous level measuring
<i>Type</i>	OPTIWAVE 8300 C
<i>Applicant</i>	KROHNE SKARPENORD Stromtangveien 21 3950 Brevik NORWAY
<i>Manufacturer</i>	KROHNE SAS
<i>Place of manufacture</i>	Les Ors, Bp 98 26103 Romans FRANCE
<i>Reference standards</i>	Rules for the classification of ships.- Part C - Machinery, systems and fire protection. - Ch.3, Sect. 6, Table 1.

Issued in Genoa on September 24, 2007. This Certificate is valid until September 24, 2012

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RINA

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This certificate consists of this page and 1 enclosure



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OPTIWAVE 8300 C

The **OPTIWAVE 8300 C** is designed for measuring the distance from the top to the liquid / solid surface in the tank;

Local display on antenna head: Graphical LCD with touch screen

Working principle:

Its measurement principle is based on " Frequency Modulated Continuous Wave" operating at 24 GHz. The signal is transmitted from the Horn antenna, reflected from the surface and received in the antenna after a short period of time.

Since the signal is continuously swept , the frequency of the received signal will be slightly different from the signal currently being transmitted resulting in a frequency difference being proportional to the distance measured.

By using Fast Fourier Transform on the frequency difference , a spectrum is calculated representing the accurate distance.

The distance measured is then converted to an output current HART Output 1, and 4-20 mA Output 2 presented on the instruments output terminals:

range 3.8-20.5 mA acc. to NAMUR NE43 & HART; error handling 3.6 / 22 mA

Measuring range : 0-40 m

Material:

Housing and protection cover: SS 316L

Antenna and flange: SS 316 L

Technical description:

OPTIWAVE 8300 C Marine Data Sheet (ref: www.krohne-skarpenord.com) 24/09/2007

Test Reports:

DNV report n° 2006-3573 rev. 1

DNV report n° 2006-3445 rev. 2

Genoa 24/09/2007

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