

**EU RO MUTUAL RECOGNITION  
TYPE APPROVAL CERTIFICATE**

This Certificate is issued to

**Kongsberg Maritime AS**  
**Ranheim, Norway**

for  
**Sensors**

with type designation(s)  
**Bearing Wear Sensor PSS11**

The product is found to comply with  
**EU RO Mutual Recognition Technical Requirements for Sensors**

Intended service

**Applicable for a ship as defined in Mutual Recognition provisions Article 10 Regulation on Common Rules and Standards For Ship Inspection and Survey Organizations.**  
**Sensors intended for short distance measurement to ferroelectric materials.**

**Temperature [°C]:** 5°C ~ +80°C  
**Vibration:** 7.79mm/10g - 3-25Hz/25-100Hz  
**EMC:** All locations including bridge and open deck  
**IP Code:** IP67

This Certificate is valid until **2022-11-13**.

Issued at **Høvik** on **2017-11-14**

DNV GL local station: **Trondheim**

Approval Engineer: **Nils Jarem**

for **DNV GL**

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**Odd Magne Nesvåg**  
**Head of Section**

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.



Job Id: **262.4-000101-1**  
Certificate No: **MRA000001E**

## Product description

The PSS11 bearing wear sensor is an eddie current proximeter sensor supplied in a kit complete with nuts and washers for correct mounting. The name of this kit is PS-11. The PS-11 kit is used in a Bearing Wear Condition Monitoring system (BWCM) to monitor the wear down of crank train bearings. The BWCM system is supplied as standalone or as an integrated part of the K Chief and/or Auto Chief Automation System from Kongsberg Maritime. BWCM as a system is covered by the type approval of the automation system.

Power supply: 18 to 32 VDC  
Power consumption: Nominal 0.8 W Max. 1 W  
Output signal: CANOpen

## Manufactured by

MICRO-EPSILON MESSTECHNIK GmbH & Co. KG, on behalf of Kongsberg Maritime AS Norway.

Address of production site:  
MICRO-EPSILON Czech Republic,  
spol. s r. o.  
MEL  
Na Libusi 891  
CZ 39165 Bechyne

## Application/Limitation

The Type Approval covers hardware listed under type designation.

Applicable for a ship as defined in Mutual Recognition provisions Article 10 Regulation on Common Rules and Standards for Ship Inspection and Survey Organizations.

## Type Approval documentation

Data sheet: PSS11, 430555A, rev. A, dated 2017-10-30  
Documents: PSS11 Signal Processing Block Diagram, Ver. A  
Bearing Wear Installation Manual P-BWS/FE Rev. B, dated 2009-07-20  
Test reports: Nemko EMC Report PS-11 no.: 129871/3, dated 2009-06-24  
Nemko Env Report PS-11 no.: 129871/Env01 rev. 00, dated 2009-07-28

EU RO MR type approval PQA scheme initial assessment report, DNV GL Trondheim 2017-09-15

## Marking of product

The products to be marked with:

- brand/supplier: KONGSBERG  
- manufacturer name: ME (logo)  
- Country of origin: CZECH REPUBLIC  
- model name: PSS11  
- unique serial number: sn: xxxxx

## Other Conditions

The Sensor have been verified for compliance with EU Mutual Recognition Technical Requirements for Sensors version 0.3, dated 2016-04-01.

Environmental test parameters  
Temperature: 5°C ~ +80°C  
Vibration: 7.79mm/10g - 3-25Hz/25-100Hz  
Humidity: 95%RH @ 55°C  
EMC: All locations including bridge and open deck  
Enclosure: IP67

Job Id: **262.4-000101-1**  
Certificate No: **MRA000001E**

### **Periodical assessment**

The scope of the periodical assessment 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 assessment 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

Periodical assessment is to be performed annually and at renewal of this certificate.

END OF CERTIFICATE