



# EUROPEAN UNION RECOGNISED ORGANISATION (EU RO) MUTUAL RECOGNITION TYPE APPROVAL CERTIFICATE

Certificate No:  
**MRA000001E**  
Revision No:  
**1**

In accordance with Article 10.1 of EU Regulation 391/2009

This Certificate is issued to  
**Kongsberg Maritime AS Avd Skonnertvegen  
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  
**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 is to certify:

that the Product referred to herein has been inspected for the Manufacturer, pursuant to the relevant requirements of the European Union Recognised Organisation Mutual Recognition procedure, required by Article 10.1 of EU Regulation 391/2009, and has been found in accordance with those requirements.

This Certificate is valid until **2027-11-13**.

Issued at **Høvik** on **2023-02-06**

DNV local unit: **Trondheim**

Approval Engineer: **Ståle Sneen**



for **DNV**  
Digitally Signed By: Kristensen, Steinar  
Location: DNV Høvik, Norway  
Signing Date: 08.02.2023 , on behalf of

**Frederik Tore Elter**  
**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.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to 300,000 USD.



Form code: MRTA 201

Revision: 2022-09

www.dnv.com

Page 1 of 4



Job Id: 262.4-000101-2  
Certificate No: MRA000001E  
Revision No: 1

## Product description

The PSS11 bearing wear sensor is an eddy 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

Hardware name and version: PSS-11 Version B  
Software name and version: P1PSS11 V3.1.x

## 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 Libuši 891  
CZ 39165 Bechyně

## 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  
Software revision history, PS-11: 426590 Rev. B  
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  
Nemko EMC Report PS-11 no.: E22094.00, dated 2022-04-22

EU RO MR type approval PQA scheme periodical assessment checklist, DNV Trondheim 2022-11-21  
EU RO MR type approval PQA scheme periodical assessment checklist, Czechia CMC 2023-01-10

## 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 has been verified for compliance with EU Mutual Recognition Technical Requirements for Sensors version 0.4, dated 2018-07-01.

Applicable tests according to IACS Unified Requirements E10 rev. 7 and rev. 8 have been verified.

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: **262.4-000101-2**  
Certificate No: **MRA000001E**  
Revision No: **1**

### **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



Job Id: **262.4-000101-2**  
Certificate No: **MRA000001E**  
Revision No: **1**

### **Generic Statement for EU RO MR Type Approval Certificate**

When a product is presented with this EU RO MR Type Approval Certificate for given application, its acceptability with regards to the limitations stated in the certificate conditions defined in 1b, 1c and 1d of the applied Technical Requirement will be evaluated by the EU RO in charge of classing the ship or being in charge of the unit/system certification.

In accordance with Article 10 of Regulation (EC) No 391/2009 of the European Parliament and of the Council of 23 April 2009 "on common rules and standards for ship inspection and survey organizations", the following organizations, recognized by the EU on this date, have agreed on the technical and procedural conditions under which they will mutually recognize this certificate:

- American Bureau of Shipping (ABS);
- Bureau Veritas (BV);
- China Classification Society (CCS);
- Croatian Register of Shipping (CRS);
- DNV;
- Indian Register of Shipping (IRS);
- Korean Register (KR);
- Lloyd's Register Group Ltd. (LR);
- Nippon Kaiji Kyokai General Incorporated Foundation (ClassNK);
- Polish Register of Shipping (PRS);
- RINA Services S.p.A. (RINA);
- Russian Maritime Register of Shipping (RS).

The scheme for the mutual recognition of class certificates for materials, equipment and components laid down by Article 10(1) of Regulation (EC) No 391/2009 is only enforceable within the Union in respect of ships flying the flag of a Member State. As far as foreign vessels are concerned, the acceptance of relevant certificates remains at the discretion of relevant non-EU flag States in the exercise of their exclusive jurisdiction, notably under the United Nations Convention on the Law of the Sea (UNCLOS). (In accordance with COMMISSION IMPLEMENTING REGULATION (EU) No 1355/2014 amending Regulation (EC) No 391/2009 - recital (25)).