Confirmation of Product Type Approval

Company Name: KONGSBERG MARITIME AS, TRONDHEIM

Address: SKONNERTVEGEN 17053 RANHEIMP.O. BOX 2434 TRONDHEIM 7005 Norway

Product: Monitoring Instruments

Model(s): BWM (PS-11)

Endorsements:

Certificate Type	Certificate Number	Issue Date	Expiry Date
Product Design Assessment (PDA)	24-0095821-PDA	25-OCT-2024	24-OCT-2029
Manufacturing Assessment (MA)	20-4414541	27-AUG-2020	26-AUG-2025
Product Quality Assurance (PQA)	NA	NA	NA

Tier
3 - Type Approved, unit certification not required

Intended Service
Marine and Offshore Installations.

Description
Bearing wear monitoring for large two stroke diesel engines fitted in marine and offshore installations.

The PS-11 sensor is based on the eddy current principle and is used for measurements against electrically conductive, ferromagnetic materials. The sensors are mounted on specially designed bracket and fixed to the engine frame beneath the crosshead guide. A high-frequency alternating current flows through a coil cast in the sensor housing. The electromagnetic coil field induces eddy currents in the conductive target which alters the AC resistance of the coil. This change in impedance produces a linear electrical signal proportional to the distance of the target from the sensor.

The measurements take place every time the crosshead pin passes Bottom Dead Centre (BDC) during engine running. The sensor is sampling at a speed of 2 kHz and a when the crank are a few degrees before BDC the sensor will sense that the surface is approaching. The distance measurement is compared with the reference obtained during installation and commissioning, which in turn determine the bear wear condition. The signal from the sensor is processed and transmitted to a bearing wear monitoring system via a CAN bus for alarm and indication purposes.

Ratings
Sensor Power Supplies: 18 to 32 VDC;

Power consumption: 0.8W to 1W

Protection rating for sensor and source: IP67;

Housing material: Steel to AISI 304;

Operating Temperature: 0 to 80 degree C;

Sensor communication protocol: CANopen bus.

Service Restrictions
Unit Certification is not required for this product. If the manufacturer or purchaser requests an ABS Certificate for compliance with a specification or standard, the specification or standard, including inspection standards and tolerances, must be clearly defined.

Comments
The Manufacturer has provided a declaration about the control of, or the lack of Asbestos in this product.

Notes, Drawings and Documentation
Drawing No. PS-11 Data Sheet, Bearing Wear Monitoring, Revision: 0, Pages: 1

Test Report 129871/Env01 – IACS E10 (2006) tested by Nemko dated 28 July 2009.

Test Report E22094.00 – IACS E10 Rev.8:2021 (Partial test, only 1-6GHz extensions to radiated emissions and immunity) tested by Nemko dated 22 April 2022.

Term of Validity
This Product Design Assessment (PDA) Certificate remains valid until 24/Oct/2029 or until the Rules and/or Standards used in the assessment are revised or until there is a design modification warranting design reassessment (whichever occurs first).

Acceptance of product is limited to the "Intended Service" details prescribed in the certificate and as per applicable Rules and Standards.

This Certificate is valid for installation of the listed product on ABS units which exist or are under contract for construction on or previous to the effective date of the ABS Rules and standards applied at the time of PDA issuance. Use of the Product for non-ABS units is subject to agreement between the manufacturer and intended client.

ABS Rules
2024 Marine Vessels Rules 1A-1-4/7.7, 1A-1-Appendix 3 and 4, 4-9-9/13, 4-8-3/1.11.1, 4-8-3/Table 1A & 1B, 4-8-3/Table 2;

2024 High Speed Craft Rules 1C-1-4/11.9, 1C-1-A2, 1C-1-A3, 4-6-3/3.1.1, 4-6-3/Table 1;

2024 Mobile Offshore Units Rules 1B-1-4/9.7, 1B-1-A2, 1B-1-A3, 4-3-3/3.1.1, 4-3-3/Table 1;

2024 Rules for Facilities on Offshore Installations: 1B-1-4/9.7, 1B-1-A2, 1B-1-A3, 3-6/5.1, 3-6/Table1A & 1B

International Standards
NA

EU-MED Standards
NA

National Standards
NA

Government Standards
NA

Other Standards

NA

Corporate ABS Programs
American Bureau of Shipping
Print Date and Time: 06-Nov-2024 6:54

ABS has used due diligence in the preparation of this certificate, and it represents the information on the product in the ABS Records as of the date and time the certificate is printed.

If the Rules and/or standards used in the PDA evaluation are revised or if there is a design modification (whichever occurs first), a PDA revalidation may be necessary.

The continued validity of the MA is dependent on completion of satisfactory audits as required by the ABS Rules. The validity of both PDA and MA entitles the product to receive a **Confirmation of Product Type Approval.**

Acceptance of product is limited to the "Intended Service" details prescribed in the certificate and as per applicable Rules and Standards.

This Certificate is valid for installation of the listed product on ABS units which exist or are under contract for construction on or prior to the effective date of the ABS Rules and standards applied at the time of PDA issuance. ABS makes no representations regarding Type Approval of the Product for use on vessels, MODUs or facilities built after the date of the ABS Rules used for this evaluation.

Type Approval requires Drawing Assessment, Prototype Testing and assessment of the manufacturer's quality assurance and quality control arrangements. The manufacturer is responsible to maintain compliance with all specifications applicable to the product design assessment. Unless specifically indicated in the description of the product, certification under type approval does not waive requirements for witnessed inspection or additional survey for product use on a vessel, MODU or facility intended to be ABS classed or that is presently in class with ABS.

Due to wide variety of specifications used in the products ABS has evaluated for Type Approval, it is part of our contract that; whether the standard is an ABS Rule or a non-ABS Rule, the Client has full responsibility for continued compliance with the standard.

Questions regarding the validity of ABS Rules or the need for supplemental testing or inspection of such products should, in all cases, be addressed to ABS.