



CERTIFICATE NUMBER 26-0468602-PDA
EFFECTIVE DATE 27-Jan-2026
EXPIRY DATE 26-Jan-2031
ABS TECHNICAL OFFICE London Engineering Department

CERTIFICATE OF Product Design Assessment

This is to certify that a representative of this Bureau did, at the request of

KONGSBERG MARITIME AS, TRONDHEIM

located at

**SKONNERTVEGEN 1, 7053 RANHEIM, P.O. BOX 2434 ,
TRONDHEIM, Norway, 7005**

assess design plans and data for the below listed product. This assessment is a representation by the Bureau as to the degree of compliance the design exhibits with applicable sections of the Rules. This assessment does not waive unit certification or classification procedures required by ABS Rules for products to be installed in ABS classed vessels or facilities. This certificate, by itself, does not reflect that the product is Type Approved. The scope and limitations of this assessment are detailed on the pages attached to this certificate.

Product: Temperature Transmitter

Model: Temperature Sensor MB / MN Series

Endorsements:

Tier: 3 - Type Approved, unit certification not required

This Product Design Assessment (PDA) Certificate remains valid until 26/Jan/2031 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.

American Bureau Of Shipping

Peter Edward (Peter Deegan) Lewis
Deegan, Engineer/Consultant

NOTE: This certificate evidences compliance with one or more of the Rules, Guides, standards or other criteria of ABS or a statutory, industrial or manufacturer's standards. It is issued solely for the use of ABS, its committees, its clients or other authorized entities. Any significant changes to the aforementioned product without approval from ABS will result in this certificate becoming null and void. This certificate is governed by ABS Rules 1-1-A3/5.9 Terms and Conditions of the Request for Product Type Approval and Agreement (2010)

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Tier: 3 - Type Approved, unit certification not required

Product: Temperature Transmitter**Model:** Temperature Sensor MB / MN Series**Endorsements:****Intended Service:**

Marine and Offshore applications - For Use on ABS ABCU, ACC and ACCU Classed Vessels.

Description:

Temperature sensors with resistance elements (PT100 or PT1000), thermocouples (NiCr-NiAl, Fe-CuNi) and thermistors.

Rating:

Refer to the manufacturer's details as outlined in the attached data sheet.

Service Restriction:

1. Unit Certification is not required for this product.
2. 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:

1. The Manufacturer has provided a declaration about the control of, or the lack of, asbestos in this product.
2. The Power supply variations (Test no. 1), the High voltage (Test no. 8), the Electrostatic discharge (Test no. 11), the Electromagnetic field (Test no. 12), the Conducted Low Frequency (Test no. 13), the Conducted Radio Frequency (Test no. 14), the Electrical Fast Transients/Burst (Test no. 15), the Surge (Test no. 16), the Radiated Emission (Test no. 17) and the Conducted Emission (Test no. 18) tests per 2026 Marine Vessel Rules 4-9-9/15.7 Table 1 have not been performed on the subject temperature sensors as they are constructed with no electronics, but only resistance elements (PT100 or PT1000), thermocouples (NiCr-NiAl, Fe-CuNi) and thermistors.

Notes/Drawing/Documentation:

Drawing No. MD-SDOC MN_MB, 349551h - MB_MN series MD_SDoC, Revision: 1, Pages: 2

Drawing No. Simple apparatus, Simple apparatus Temperature sensors_Pt100_Pt1000_TC, Revision: 1, Pages: 1

Drawing No. Temp, temps_re, Revision: 1, Pages: 155

Drawing No. CISPR 16-2-1, Declaration - CISPR 16-2-1, Gap Analysis, Lab: Nemko Scandinavia A/S, Dated: 18/12/2024, Revision: 1, Pages: 1

Drawing No. CISPR 16-2-3, Declaration - CISPR 16-2-3, Gap Analysis, Lab: Nemko Scandinavia A/S, Dated: 18/12/2024, Revision: 1, Pages: 1

Drawing No. Dif rev 5 rev 9, Declaration - KM - IACS E10 Rev 9 diff to Rev 5, Gap Analysis, Lab: Nemko Scandinavia A/S, Dated: 11/03/2025, Revision: 1, Pages: 2

Drawing No. C-54, C-54, Lab: Autronica A/S, Dated: 04/02/1987, Revision: 1, Pages: 7

Drawing No. C-124, c-124 MBMN, Lab: Autronica A/S, Dated: 27/09/1993, Revision: 1, Pages: 2

Drawing No. Rules Env., Rules ABS Part 4 Environmental testing, Lab: Nemko Scandinavia A/S, Dated: 28/10/2010, Revision: 1, Pages: 1

Drawing No. E-10123.01, Environmental test E-10123.01 -TC 360971B, Lab: Nemko Scandinavia A/S, Dated: 16/04/2013, Revision: 1, Pages: 41

Drawing No. GL Extended, Environmental test extended GL-requirements E10179.00 TC-360980, Lab: Nemko Scandinavia A/S, Dated: 28/10/2010, Revision: 1, Pages: 25

Terms of Validity:

This Product Design Assessment (PDA) Certificate remains valid until 26/Jan/2031 or until the Rules and/or Standards used in the assessment are revised or until there is a design modification warranting design reassessment

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STANDARDS

ABS Rules:

2026 Rules for Conditions of Classification, Part 1A: 1-1-4/7.7, 1-1-A3, 1-1-A4, which cover the following:

2026 Marine Vessel Rules: 4-8-3/1.3, 4-8-3/1.7, 4-8-3/1.11, 4-8-3/1.17.1, 4-9-9/13.1, 4-9-9/15.7 Table 1

2025 Rules for Conditions of Classification, Part 1B - Offshore Units and Structures 1-1-4/9.7, 1-1-A2, 1-1-A3, which cover the following:

2026 Mobile Offshore Units Rules: 4-3-1/11, 4-3-1/15, 4-3-1/17, 4-3-3/Table 1, 6-1-6/5.7, 6-1-7/Table 1

National:

NA

International:

IACS UR E10: Rev. 10: 2024

Government:

NA

EUMED:

NA

OTHERS:

NA