



CERTIFICATE NUMBER	21-2076513-PDA
EFFECTIVE DATE	28-Jan-2021
EXPIRY DATE	27-Jan-2026
ABS TECHNICAL OFFICE	CN Shanghai ESD

CERTIFICATE OF Product Design Assessment

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

DANFOSS A/S

located at

**NORDBORGVEJ 81 - BUILDING E14 S4A, APPROVALS DEPT.,
NORDBORG, Denmark, DK-6430**

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: Exhaust Gas Temperature Sensor
Model: MBT 5111 / 5113 / 5114 / 5116
Endorsements:
Tier: 3 - Type Approved, unit certification not required

This Product Design Assessment (PDA) Certificate remains valid until 27/Jan/2026 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


Steve A.A.P Brincat, 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)

DANFOSS A/S

NORDBORGVEJ 81 - BUILDING E14 S4A

APPROVALS DEPT.

NORDBORG

Denmark DK-6430

Telephone: 45-7488-2222

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Email: danfoss@danfoss.com

Web: www.danfoss.com

Tier: 3 - Type Approved, unit certification not required

Product: Exhaust Gas Temperature Sensor

Model: MBT 5111 / 5113 / 5114 / 5116

Endorsements:

Intended Service:

For use on ABS Classed Vessels and Offshore Facilities in accordance with the listed ABS Rules and International Standards.

Description:

The MBT 5111 / 5113 / 5114 / 5116 are heavy-duty temperature sensors with Fixed Measuring Inserts and adjustable insertion length, up to 150 mm using compression fitting that can be used for measuring and regulating exhaust gas from diesel engines, turbines and compressors within stationary and marine applications. All parts in contact with the media are made of stainless steel AISI 316 Ti.

Rating:

Exhaust Gas Temperature Measuring Up 800 degrees C, IP65 and IP67.

Service Restriction:

Unit Certification is not required for this product.

If the manufacturer or purchaser request 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/Drawing/Documentation:

Drawing No. 117-34687-2, EMC Marine test of high temperature sensors, Revision: n/a, Pages: 32

Drawing No. IC.PD.P30.C9.02_MBT5111_MS, MBT 511, Revision: n/a, Pages: 4

Drawing No. IC.PD.P30.H6.02_MBT 5113_5116, MBT 5113/5116, Revision: n/a, Pages: 6

Drawing No. IC.PD.P30.T3.02_MBT5114_MS, MBT 5114, Revision: n/a, Pages: 4

Terms of Validity:

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STANDARDS

ABS Rules:

Rules for Conditions of Classification, Part 1 - 2021 Marine Vessels Rules 1-1-4/7.7, 1-1-A3, 1-1-A4, which covers the following:

2021 Marine Vessels 4-8-3/1.7, 4-8-3/1.11.1, 4-8-3/1.17, 4-8-3/Table 2 and 4-9-9/Table 1 items 11~18.

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Rules for Conditions of Classification, Part 1 - 2021 Offshore Units and Structures 1-1-4/9.7, 1-1-A2, 1-1-A3, which covers the following:

2021 Mobile Offshore Units 4-3-1/11, 4-3-1/15, 4-3-1/17, 4-3-3/Table 1, 6-1-1/9 and 6-1-1/13;

2021 Facilities on Offshore Installations 3-6/5.1.

National:

NA

International:

IACS UR E10 Rev. 7(2018) EMC tests.

Government:

NA

EUMED:

NA

OTHERS:

NA