



CERTIFICATE NUMBER	22-2216720-PDA
EFFECTIVE DATE	15-Feb-2022
EXPIRY DATE	14-Feb-2027
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

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: Temperature Sensor
Model: MBT 5560, Compact temperature sensor with a built-in transmitter.
Endorsements:
Tier: 3 - Type Approved, unit certification not required

This Product Design Assessment (PDA) Certificate remains valid until 14/Feb/2027 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

SBalakan

Serkan Balakan, 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

Fax: 45-7465 2580

Email: danfoss@danfoss.com

Web: www.danfoss.com

Tier: 3 - Type Approved, unit certification not required

Product: Temperature Sensor

Model: MBT 5560, Compact temperature sensor with a built-in transmitter.

Endorsements:

Intended Service:

For use on ABS classed vessels and offshore facilities in accordance with the listed ABS Rules and International Standards

Description:

Temperature Sensor with built-in transmitter for maritime applications.

Rating:

Measuring range: Any combination between -50 degrees C and +200 degrees C,

Output signal: 4-20 mA or Ratiometric 10 - 90%,

Based on Pt 1000 technology,

IP Rating: IP65/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, the lack of Asbestos in this product.

Notes/Drawing/Documentation:

Drawing No. 121-29917-1, Danfoss A_S - Marine mutual recognition test of low temperature transmitters, Report 121-29917-1, Location: Force Technology Denmark, Issue Date: 26.01.2022, Revision: -, Pages: 184.

Drawing No. AI202286432128en-000901, Datasheet - Temperature sensor Type MBT 5560, Revision: -, Pages: 6.

Terms of Validity:

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STANDARDS

ABS Rules:

- Marine Vessel Rules (2022): 1-1-4/7.7, 1-1-A3&A4; 4-8-3/1.7, 4-8-3/1.11, 4-9-9/7, 4-9-9/13, 4-9-9/15.7 Table-1;
- Facilities on Offshore Installations (2022): 1-1-4/9.7, 1-1-A2&A3;
- Mobile Offshore Units (2022): 1-1-4/9.7, 1-1-A2&A3, 6-1-1/9, 6-1-1/13, 4-1-1/7.9, 4-3-1/11;

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- Steel Vessels for Service on Rivers and Intracoastal Waterways (2022): 1-1-4/7.7, 1-1-A3&A4, 4-5-1/13;
- High Speed Crafts (2022): 1-1-4/11.9, 1-1-A2&A3, 4-6-1/11, 4-7-9/15.5 Table-9;
- Steel Barge Rules (2022): 1-1-4/7.7, 1-1-A3&A4, 4-1-3/5.7;

National:

NA

International:

IACS UR E10 Rev. 8:2021.

Government:

NA

EUMED:

NA

OTHERS:

NA