



CERTIFICATE NUMBER	20-1993817-PDA
EFFECTIVE DATE	20-May-2020
EXPIRY DATE	19-May-2025
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 5310 / 5410 / 5722**

This Product Design Assessment (PDA) Certificate remains valid until 19/May/2025 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

Theodoros Chatzidakis, 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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Web: www.danfoss.com

**Tier: 3 - Type Approved, unit certification not required**

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**Product:** Temperature Sensor

**Model:** MBT 5310 / 5410 / 5722

**Intended Service:**

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

**Description:**

Temperature Sensors with Fixed Measuring Insert

**Rating:**

MBT 5310 Measuring range: -50 to +200°C

MBT 5410 Measuring range: -50 to +100°C

MBT 5722 Measuring range: -50 to +200°C

**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. 117-34687-2, EMC Marine test of high temperature sensors, Revision: n/a, Date: 01-Apr-2020, Force Technology, Pages: 1

Drawing No. Correspondence, email 4 may 2020 PDA renewal 15-LD1317842-1-PDA, Revision: -, Pages: 1

Drawing No. IC.PD.P30.J7.02\_MBT5410\_MS, MBT 5410, Revision: n/a, Pages: 1

Drawing No. IC.PD.P30.M7.02\_MBT5722\_MS, MBT 5722, Revision: n/a, Pages: 1

Drawing No. IC.PD.P30.Q4.02\_MBT5310\_MS, MBT 5310, Revision: n/a, Pages: 1

**Terms of Validity:**

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**STANDARDS**

**ABS Rules:**

- Marine Vessel Rules (2020) 1-1-4/7.7, 1-1-A3, 1-1-A4; 4-8-3/1.7, 4-9-8 Table 1
- Facilities on Offshore Installations (2020) 1-1-4/9.7, 1-1-A2, 1-1-A3
- Mobile Offshore Units (2020) 1-1-4/9.7, 1-1-A2, 1-1-A3, 6-1-1/9, 6-1-1/13; 4.3.1/11
- High Speed Crafts (2020) 1-1-4/11.9, 1-1-A2, 1-1-A3; 4-6-1/11, 4-7-9 Table 9

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- Steel Barge Rules (2020) 1-1-4/7.9, 1-1-A3, 1-1-A4

**National:**

NA

**International:**

IACS UR E10 Rev.7:2018

**Government:**

NA

**EUMED:**

NA

**OTHERS:**

NA