



CERTIFICATE NUMBER  
15-LD1317842-PDA

DATE  
19 Mar 2015

ABS TECHNICAL OFFICE  
London Engineering Department

# CERTIFICATE OF DESIGN ASSESSMENT

This is to certify that a representative of this Bureau did, at the request of  
**DANFOSS A/S**

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: **Sensor, Temperature Sensor**

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


This Product Design Assessment (PDA) Certificate 15-LD1317842-PDA, dated 19/Mar/2015 remains valid until 18/Mar/2020 or until the Rules or specifications used in the assessment are revised (whichever occurs first).

This PDA is intended for a product to be installed on an ABS classed vessel, MODU or facility which is in existence or under contract for construction on the date of the ABS Rules or specifications used to evaluate the Product.

Use of the Product on an ABS classed vessel, MODU or facility which is contracted after the validity date of the ABS Rules and specifications used to evaluate the Product, will require re-evaluation of the PDA.

Use of the Product for non ABS classed vessels, MODUs or facilities is to be to an agreement between the manufacturer and intended client.

AMERICAN BUREAU OF SHIPPING

  
\_\_\_\_\_  
Malcolm C Barraclough  
Engineer

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 the terms and conditions as contained in 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  
NORDBORG  
Denmark DK-6430  
Telephone: 45-7488-2222  
Fax: 45-74 88 40 00  
Email: flemming\_boss@danfoss.com  
Web: www.danfoss.com



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

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**Product:** Sensor, 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. Assembly drawing  
Drawing No. Change description  
Drawing No. Tests MBT5310,  
Drawing No. Product specification  
Drawing No. MBT5310 product catalogue  
Drawing No. Engineering sheets  
Drawing No. Cold test of MBT 5310  
Drawing No. Data sheet and Leaflet MBT 5310  
Drawing No. Damp heat cyclic test of MBT 5310  
Drawing No. Shock test of MBT 5310  
Drawing No. 1. Vibration test of MBT 5310, Revision  
Drawing No. 2. Vibration test of MBT 5310, Revision

**Terms of Validity:**

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**STANDARDS**

**ABS Rules:**

- Steel Vessel Rules (2015) 1-1-4/7.7, 1-1-A3&A4; 4-8-3/1.7
- Steel Vessels Under 90 Meters (295 Feet) in Length (2015) 1-1-4/7.7, 1-1-A3&A4;
- Facilities on Offshore Installations (2015) 1-1-4/9.7, 1-1-A2&A3;
- Offshore Support Vessels (2015) 1-1-4/7.7, 1-1-A3&A4, 4-8-3/1.7
- Mobile Offshore Drilling Units (2015) 1-1-4/9.7, 1-1-A2&A3, 6-1-1/9, 6-1-1/13; 4.3.1/11
- Steel Vessels for Service on Rivers and Intra-coastal Waterways (2015) 1-1-4/7.7, 1-1-A3&A4;
- High Speed Crafts (2015) 1-1-4/11.9, 1-1-A2&A3; 4-6-1/11
- Steel Barge Rules (2015) 1-1-4/7.9, 1-1-A3&A4;

**National:**

NA

**International:**

IEC 60068-2-6 ed7.0 (2007-12), IEC 60068-2-27 ed4.0 (2008-02), IEC 60068-2-30 ed3.0 (2005-08), IEC 60068-2-1 ed6.0 (2007-03)

**Government:**

NA

**EUMED:**

NA

**OTHERS:**

NA

