



CERTIFICATE NUMBER
16-LD1487293-PDA

DATE
26 Feb 2016

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: **Exhaust Gas Temperature Sensor**

Model: **MBT 5111 / 5113 / 5114 / 5116**

This Product Design Assessment (PDA) Certificate 16-LD1487293-PDA, dated 26/Feb/2016 remains valid until 25/Feb/2021 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

Roberto Alvarez
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 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).

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Tier: 3 - Type Approved, unit certification not required

Product: Exhaust Gas Temperature Sensor

Model: MBT 5111 / 5113 / 5114 / 5116

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. MBT 5111 variants: Code 087U4029/4034/4035/4040, 084X1116, 084X1117/1121/1122, serial no.060707-8

Drawing No. IP 67 test, IP 67 test, Revision: -, Pages: -

Drawing No. MBT 5114 Performance test of 087U4065, Revision: -, Pages: -

Drawing No. Performance test MBT 5111, Revision: -, Pages: -

Terms of Validity:

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STANDARDS

ABS Rules:

- Steel Vessel Rules (2016): 1-1-4/7.7, 1-1-A3&A4; 4-8-3/1.7, 4-8-3/1.11, 4-8-3/1.17
- Steel Vessels Under 90 Meters (295 Feet) in Length (2016): 1-1-4/7.7, 1-1-A3&A4; 4-6-1/11, 4-6-1/15, 4-6-1/17
- Facilities on Offshore Installations (2016): 1-1-4/9.7, 1-1-A2&A3;
- Offshore Support Vessels (2016): 1-1-4/7.7, 1-1-A3&A4, 4-8-3/1.7, 4-8-3/1.11, 4-8-3/1.17,

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- Mobile Offshore Drilling Units (2016) 1-1-4/9.7, 1-1-A2&A3, 6-1-1/9, 6-1-1/13; 4.3.1/11, 4-3-1/15, 4-3-1/17
- Steel Vessels for Service on Rivers and Intracoastal Waterways (2016): 1-1-4/7.7, 1-1-A3&A4; 4-5-1/13, 4-5-1/17, 4-5-1/19
- High Speed Crafts (2016): 1-1-4/11.9, 1-1-A2&A3; 4-6-1/11, 4-6-1/15, 4-6-1/17
- Steel Barge Rules (2016): 1-1-4/7.9, 1-1-A3&A4; 4-1-3/5.7

National:

EN 60529:1991

International:

IEC 60529 Ed. 2.0 b: 1989+ A1:1999

Government:

NA

EUMED:

NA

OTHERS:

NA