



CERTIFICATE NUMBER 18-LD1740756-PDA
EFFECTIVE DATE 08-Jun-2018
EXPIRATION DATE 07-Jun-2023
ABS TECHNICAL OFFICE London

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 Pressure Transmitter

Model MBS 2100/2150, MBS 3100/3150, MBS 3300/3350

This Product Design Assessment (PDA) Certificate remains valid until 07-Jun-2023 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 Chatzidakas, Senior 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 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: 45-74 88 40 00

Email: luo.xiangya@danfoss.comWeb: www.danfoss.com**Tier: 3 - Type Approved, unit certification not required****Product:** Pressure Transmitter**Model:** MBS 2100/2150, MBS 3100/3150, MBS 3300/3350**Intended Service:**

Compact pressure and high temperature pressure transmitters for use on ABS Classed vessels and offshore installations in accordance with the listed ABS Rules and International Standards.

Description:

MBS 3100 and MBS 3150 are compact pressure transmitters designed with integrated pulse-snubber suitable for use in severe medium influences like cavitation, liquid hammer or pressure peaks.

MBS2100/MBS2150 and MBS3300/MBS3350 are compact high temperature pressure transmitters with flexible pressure transmitter program covering different output signals, absolute and gauge (relative) versions, and wide range of pressure and electrical connections.

Rating:

Pressure Range: 0-600 Bar;

Power Supply: 10 VDC to 32 VDC;

Output Signal: 4-20 mA;

Protection: IP65/IP67;

Shock Resistance: 500 g/1 ms;

Operation Temperature: -40 degrees to 125 degrees C;

Vibration Stability: 20g Sinusoidal, 7.5 gr random

Service Restriction:

Unit Certification is not required for this product. Each specific arrangement is to be specifically approved.

Comments:

The manufacturer has provided a declaration about the control of, or the lack of Asbestos in this product.

Notes/Drawing/Documentation:

Drawing No. Data Sheet, Pressure Transmitter for high temperature marine applications, Revision: -, Pages: 1

Drawing No. Document - ABS 09-LD483624C-3-PDA, Document - ABS 09-LD483624C-3-PDA, Revision: -, Pages: 1

Drawing No. MBS 3350 PRESSURE SENSOR, Engineering Sheet Pressure and Temperature Controls, Revision: -, Pages: 1

Drawing No. PDA Type Approval Application Form MBS 2100-2150-3100-3150-3300-3350 rev 20180108 signed, PDA Type Approval Application Form MBS 2100-2150-3100-3150-3300-3350 rev 20180108 signed, Revision: -, Pages: 1

Terms of Validity:

This Product Design Assessment (PDA) Certificate 18-LD1740756-PDA, dated 08/Jun/2018 remains valid until 07/Jun/2023 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.

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Tier: 3 - Type Approved, unit certification not required

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

STANDARDS**ABS Rules:**

- Steel Vessel Rules (2018): 1-1-4/7.7, 1-1-A3, 1-1-A4, 4-8-3/1.7, 4-9-8/7, 4-9-8/13, 4-9-8/Table1;
- Steel Vessels Under 90 Meters (295 Feet) in Length (2018): 1-1-4/7.7, 1-1-A3, 1-1-A4;
- Facilities on Offshore Installations (2018): 1-1-4/9.7, 1-1-A2, 1-1-A3;
- Offshore Support Vessels (2018): 1-1-4/7.7, 1-1-A3, 1-1-A4, 4-8-3/1.7, 4-9-8/7, 4-9-8/13, 4-9-8/Table1 and Table 2;
- Mobile Offshore Drilling Units (2018): 1-1-4/9.7, 1-1-A2, 1-1-A3, 4-1-1/7.9, 4-3-1/11, 6-1-1/9, 6-1-1/13;
- Steel Vessels for Service on Rivers and Intracoastal Waterways (2018): 1-1-4/7.7, 1-1-A3, 1-1-A4;
- High Speed Crafts (2018): 1-1-4/11.9, 1-1-A2, 1-1-A3;
- Steel Barge Rules (2018): 1-1-4/7.9, 1-1-A3, 1-1-A4;

National:

NA

International:

IACS UR E10, Rev.6:2014

Government:

NA

EUMED:

NA

OTHERS:

NA

