



CERTIFICATE NUMBER	23-2425974-PDA
EFFECTIVE DATE	06-Oct-2023
EXPIRY DATE	05-Oct-2028
ABS TECHNICAL OFFICE	Houston ESD - Offshore Equipment

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 3300/3350, MBS 33M, DST P30M/35M
Endorsements:
Tier: 3 - Type Approved, unit certification not required

This Product Design Assessment (PDA) Certificate remains valid until 05/Oct/2028 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

Mohamed C Boukamcha

Mohamed C Boukamcha, 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

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Product: Pressure Transmitter
Model: MBS 3300/3350, MBS 33M, DST P30M/35M
Endorsements:

Intended Service:

ABS Classed vessels and offshore installations in accordance with the listed ABS Rules and International Standards.

Description:

MBS3300/MBS3350 and DST P30M/P35M are compact high temperature pressure transmitters with or without integrated pulse-snobber and flexible pressure transmitter program covering different output signals, absolute and gauge (relative) versions, and wide range of pressure and electrical connections for use in severe medium influences like cavitation, liquid hammer or pressure peaks.

MBS33M is a standard temperature pressure transmitter with flexible pressure transmitter program covering a 4-20mA output signal, absolute and gauge (relative) versions, and wide range of pressure and electrical connections.

Rating:

Pressure Range: 0-600 bar;

Power Supply: 9 to 32 VDC (4-20mA and 0-10V output signals) and 4.5 to 5.5 VDC (10-90% of supply output signal);

Output Signals: 4-20 mA, 0-10 V and Ratiometric 10-90% of supply;

Enclosure IP Rating: IP65/IP67;

Shock Resistance: 500 g /1 ms;

Operation Temperature: -40C to +125C;

Vibration Stability: 20 g Sinusoidal & 7.5 g Random;

Service Restriction:

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

- 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:

Document No. AI244286497067en-000901, Danfoss Datasheet for Pressure Transmitter Type - MBS 33M, Revision: -, Pages: 6.

Document No. AI308943247202en-000601, Danfoss Datasheet for Pressure Transmitter Type MBS 3300 and MBS 3350, Revision: -, Pages: 8.

Document No. AI308926732183en-000101, Danfoss Datasheet for Pressure Transmitter for Marine applications, Type DST P30M, and DST P35M, Revision: -, Pages: 6.

Document No. ID172, MBS 42X, MBS 33M, DST P30M, 35< Burst Pressure Test for Marine, Revision: -, Pages: 1.

Document No. 119-30777-1, Test Report, Test for Marine Type Approval of ID172 Pressure Transmitters, Revision: -, Pages: 118.

Drawing No. 119-30777-1 - Danfoss A_S - Test for maritime type approval of ID172 pressure transmitters, Test for marine type approval of ID172 pressure transmitters, Location: Force Technology-Denmark, Issue Date: 29.01.2020, Revision: n/a, Pages: 118.

Drawing No. AI308926732183en-000101_IC.PD. P21.1G02_DST P30M_02.2020, Datasheet DST P30M and DST P35M, Revision: 2019.12, Pages: 6.

Drawing No. AI308939294195en-000101_IC.PD. P21.1I.02_3100_3150_02.2020, Datasheet MBS 3100 and MBS

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3150, Revision: 2019.12, Pages: 6.

Drawing No. AI308943247202en-000101_IC.PD. P21.1K.02_3300_3350_02.2020, Datasheet MBS 3300 and MBS 3350, Revision: 2019.06, Pages: 6.

Drawing No. AI309032027214en-000101_IC.PD. P21.1N.02_MBS33M_12.2019_HR_02, Datasheet MBS 33M, Revision: 2019.06, Pages: 5.

Drawing No. ID172 Old design versus new design (002), Current versus new ID172 General Purpose Pressure Transmitter, Revision: n/a, Pages: 4.

Terms of Validity:

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STANDARDS

ABS Rules:

2023 Rules for Condition of Classification, Part 1, 1-1-4/7.7, 1-1-A4, which cover the following:

2023 Marine Vessel Rules: 4-6-1/7.1, 4-6-1/7.5.2, 4-8-3/1.3, 4-8-3/1.7, 4-8-3/1.9, 4-8-3-1.11, 4-8-3/1.17, 4-8-3/Table2, 4-8-3/9, 4-8-3/13, 4-8-4/27.9, 4-9-9/13, 4-9-9/Table 1.

2023 Rules for Condition of Classification, Part 1 - Offshore Units and Structures 1.1-4/9.7, 1-1-A2, 1-1-A3, which cover the following:

2023 Mobile Offshore Units Rules: 4-3-1/9, 4-3-1/11, 4-3-1/15, 4-3-1/17, 4-3-3/Table 1, 4-3-3/9, 4-3-4/5, 4-3-4/7, 6-1-6/5.7, 6-1-7/Table 1.

National:

N/A

International:

N/A

Government:

N/A

EUMED:

N/A

OTHERS:

IACS UR E10 Test Specification for Type Approval, IACS Req. 1991/Rev. 8 2021