

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Pressure Transmitter

with type designation(s)

MBS 2100/2150, MBS 3100/3150, MBS 3300/3350, MBS 33M, DST P30M/P35M

Issued to

Danfoss A/S
Kolding, Syddanmark, Denmark

is found to comply with

DNV GL rules for classification – Ships, offshore units, and high speed and light craft

Application :

Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.

Location classes:

Temperature	D; tested to 100°C (4-20 mA versions) & 125°C (Ratiometric and 1-5 V versions).
Humidity	B
Vibration	B; tested 2 - 25 Hz: ± 1.6 mm, 25 - 40 Hz: ± 4 g, 40 - 2000 Hz: ± 10 g
EMC	A
Enclosure	B / IP65 & IP67

Issued at **Høvik** on **2020-04-28**

for **DNV GL**

This Certificate is valid until **2025-04-27**.

DNV GL local station: **Denmark CMC**

Approval Engineer: **Nils Jarem**

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Marta Alonso Pontes
Head of Section

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid. The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV GL AS, its parent companies and subsidiaries as well as their officers, directors and employees ("DNV GL") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to 300,000 USD.



Job Id: **262.1-030401-2**
Certificate No: **TAA000025S**
Revision No: **1**

Product description

Pressure transmitters MBS 2100/2150, 3100/3150, 3300/3350, MBS 33M, DST P30M/35M

MBS xx50: Versions with integrated pulse-snubber
Power supply: 24V DC (nom.)
5V DC (nom.) for MBS 21xx
Output signal: 4-20 mA within range, increasing to 28 mA by over pressure
Various ranges from 0V DC up to 10V DC
10-90% of supply (ratio metric)
Pressure ranges: 0-1 bar to 0-600 bar
Operating temperature: MBS 3xxx up to 125°C
MBS 21xx up to 125°C
DST P3xM up to 125°C
MBS 33M up to 85°C
Wetted parts: stainless steel AISI 316 L
Enclosure material: stainless steel AISI 316 L
Pressure connection: various thread types
Pressure reference: absolute, relative gauge
Electrical connection: DT04-P4-CE04, and others. Refer to the datasheets.

Place of manufacture

Danfoss (Tianjin) Ltd, Wuqing Development Area, 9 Quanhui Road, 301700 Tianjin, China

Application/Limitation

Ex-certification is not covered by this certificate. Application in hazardous area to be approved in each case according to the Rules and Ex-Certification/ Special Condition for Safe Use listed in valid Ex-certificate issued by a notified/recognized Certification Body.

Approval conditions

The Type Approval covers hardware listed under Product description. When the hardware is used in applications to be classed by DNV GL, documentation for the actual application is to be submitted for approval by the manufacturer of the application system in each case. Reference is made to DNV GL rules for classification of ships Pt.4 Ch.9 Control and monitoring systems

Type Approval documentation

Data sheets: [AI309032027214en-000101](#) | [IC.PD.P21.1N.02](#) dated 2019-06
[AI308943247202en-000101](#) | [IC.PD.P21.1K.02](#) dated 2019-06
[AI308939294195en-000101](#) | [IC.PD.P21.1I.02](#) dated 2019-12
[AI308926732183en-000101](#) | [IC.PD.P21.1G.02](#) dated 2019-12
[IC.PD.P21.08.02](#) | [520B8582](#) dated 2018-05

Test report: [119-30777-1](#) dated 2020-01-29

[Type approval renewal assessment report for 11 288 - 98 HH, Tianjin 2019-01-31.](#)

Tests carried out

Applicable tests according to class guideline DNVGL-CG-0339, December 2019.

Marking of product

The products to be marked with:

- manufacturer name
- model name
- serial number
- power supply ratings

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Periodical assessment

The scope of the periodical assessment is to verify that the conditions stipulated for the type are complied with, and that no alterations are made to the product design or choice of systems, software versions, components and/or materials.

The main elements of the assessment are:

- Ensure that type approved documentation is available
- Inspection of factory samples, selected at random from the production line (where practicable)
- Review of production and inspection routines, including test records from product sample tests and control routines
- Ensuring that systems, software versions, components and/or materials used comply with type approved documents and/or referenced system, software, component and material specifications
- Review of possible changes in design of systems, software versions, components, materials and/or performance, and make sure that such changes do not affect the type approval given
- Ensuring traceability between manufacturer's product type marking and the type approval certificate

Periodical assessment is to be performed after 2 years and after 3.5 years. A renewal assessment will be performed at renewal of the certificate.

END OF CERTIFICATE