



Type Approval Certificate

This is to certify that the undernoted product(s) has/have been tested with satisfactory results in accordance with the relevant requirements of the Lloyd's Register Type Approval System.

Manufacturer	Danfoss A/S
Address	Nordborgvej 81, Nordborg, 6430, Denmark
Place of Production	Danfoss (Tianjin) Co. Ltd. No. 9 Quanhui Road, Wuqing Development Area, Tianjin, 301700, China
Type	Pressure Transmitter
Description	MBS 5100 Block MBS 5150 Block with pulse snubber MBS 5153 Block with pulse snubber
Trade Name	MBS 5100, MBS 5150, MBS 5153
Application	Marine, offshore and industrial applications for use in environmental categories ENV1, ENV2 and ENV3 as defined in Lloyd's Register's Type Approval System, Test Specification Number 1 – July 2024.
Specified Standard	Manufacturer's Specification IACS unified requirements E10 (Rev.9 Aug 2023)
Ratings	Pressure ranges in relative (gauge) or absolute from 0 up to 600 bar Supply voltages: 24 VDC Output signal: 4 – 20 mA

Units 1702-1704, 17th Floor (Level-13), Building Q2, Aurum Q Parc; Gen 4/1 TTC, Thane-Belapur Road, Ghansoli, Navi Mumbai, 400710, India

Ashwinikumar Mhamal

Electrical & Control Technical Manager -
Africa, Middle East & India to Lloyd's Register
Marine and Offshore India LLP

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Additional Tests	Shock: Acceleration level 100 g / 6 ms and 500 g / 1 ms Degree of protection: IP65 Salt mist
Other Conditions	Type Approval does not eliminate the need (as required by LR Rules) the requirements for further review or for the product to be further inspected and/or surveyed to be installed in ships classed or intended to be classed with LR. If the specified standards are amended during the validity of this certificate, the product is to be re- approved prior to it being supplied to vessels to which the amended standards apply.

This certificate is not valid for equipment, the design, ratings or operating parameters of which have been varied from the specimen tested. The manufacturer should notify Lloyd's Register Marine and Offshore India LLP of any modification or changes to the equipment in order to obtain a valid Certificate.

Previous Version: LR2010635TA-02

The Design Appraisal Document TSO-25-034586-E-01 and its supplementary Type Approval Terms and Conditions form part of this Certificate.

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Certificate No: LR2584360TA
Issue Date: 18/06/2025
Expiry Date: 17/06/2030
Reference: TSO-25-034586-E-01

LLOYD'S REGISTER TYPE APPROVAL – DESIGN APPRAISAL DOCUMENT
ISSUED BY: GLOBAL TECHNICAL SUPPORT OFFICE
ISSUED TO: Danfoss A/S
FOR: Pressure Transmitter
Type: MBS 5100, MBS 5150, MBS 5153

The undernoted documents have been reviewed for compliance with the requirements of the Lloyd's Register Type Approval System Procedure (TA V6 April 2025) and this Design Appraisal Document forms part of the Certificate LR2584360TA.

APPROVAL DOCUMENTATION

Unnumbered	Application Checklist	30.03.2025
175390	Request for Marine Services – Type Approval	10.04.2025
QDO2520025	Production Quality Assessment Report	06.05.2025
DK016649	ISO 9001:2015 Certificate	06.06.2024

Also all documentation listed on Design Appraisal Document(s) associated with Type Approval Certificate LR2010635TA-02.



Ashwinikumar Mhamal
Senior Specialist - Electrical and Control Engineering
Global Technical Support Office- Marine Operations
Lloyd's Register Marine and Offshore India LLP
Email: ashwinikumar.mhamal@lr.org



Pradip Pramanik
Assistant Specialist - Electrical and Control Engineering
Global Technical Support Office- Marine Operations
Lloyd's Register Marine and Offshore India LLP
Email: pradip.pramanik@lr.org

Supplementary Type Approval Terms and Conditions

Type Approval certifies that a representative sample of the product(s) referred to herein has/have been found to meet the applicable design criteria for the use specified herein. It does not mean or imply approval for any other use, nor approval of any product(s) designed or manufactured otherwise than in strict conformity with the said representative sample.

Type Approval is based on the understanding that the manufacturer's recommendations and instructions and any relevant requirements of the Rules and Regulations are complied with.

Type Approval does not eliminate the need for normal inspection and survey procedures required by the Rules and Regulations. Lloyd's Register Marine and Offshore India LLP reserves the right to cancel or withdraw this Type Approval Certificate in accordance with the Lloyd's Register Type Approval System Procedure.

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