



Marine & Offshore

Certificate number: 14159/E0 BV

File number: AP 3620

Product code: 3831H

This certificate is not valid when presented without the full attached schedule composed of 7 sections

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TYPE APPROVAL CERTIFICATE

This certificate is issued to

DANFOSS A/S

NORDBORG - DENMARK

for the type of product

TEMPERATURE CONTROLLERS

Temperature transmitter MBT 5560, 4-20 mA or ratiometric.

Requirements:

BUREAU VERITAS Rules for the Classification of Steel Ships.

EC Code: 43S

This certificate is issued to attest that Bureau Veritas Marine & Offshore did undertake the relevant approval procedures for the product identified above which was found to comply with the relevant requirements mentioned above.

This certificate will expire on: 22 Feb 2027

For Bureau Veritas Marine & Offshore,

At BV FREDERICIA, on 22 Feb 2022,

Jesper JENSEN



This certificate remains valid until the date stated above, unless cancelled or revoked, provided the conditions indicated in the subsequent page(s) are complied with and the product remains satisfactory in service. This certificate will not be valid if the applicant makes any changes or modifications to the approved product, which have not been notified to, and agreed in writing with Bureau Veritas Marine & Offshore. Should the specified regulations or standards be amended during the validity of this certificate, the product(s) is/are to be re-approved prior to it/they being placed on board vessels to which the amended regulations or standards apply. This certificate is issued within the scope of the General Conditions of Bureau Veritas Marine & Offshore available on the internet site www.veristar.com. Any Person not a party to the contract pursuant to which this document is delivered may not assert a claim against Bureau Veritas Marine & Offshore for any liability arising out of errors or omissions which may be contained in said document, or for errors of judgement, fault or negligence committed by personnel of the Society or of its Agents in establishment or issuance of this document, and in connection with any activities for which it may provide.

The electronic version is available at: <http://www.veristarm.com/veristarnb/jsp/viewPublicPdfTypepec.jsp?id=yx0tyulfnx>

BV Mod. Ad.E 530 June 2017

This certificate consists of 3 page(s)

THE SCHEDULE OF APPROVAL

1. PRODUCT DESCRIPTION:

Temperature Transmitter for maritime applications, type **MBT 5560**.

1.1 - Main Specifications:

- Measuring Ranges:	-50°C to +200°C
- Output Signals:	4-20 mA or Ratiometric
- Supply Voltage:	10 to 32 VDC for 4-20 mA Model 4.75 to 8 VDC for Ratiometric Model

2. DOCUMENTS AND DRAWINGS:

Danfoss A/S:

- Temperature sensor Type MBT 5560 Datasheet No. AI202286432128en-000901, dated 2021.02
- Drawing No. ESH084Z4228, dated 2018-05-17.

3. TEST REPORTS:

Danfoss A/S Corporate Approvals Department:

- ref. 2004-04-3029, dated 18-03-04
- ref. 2004-03-18, dated 18-03-04
- ref. 2004-03-23, dated 23-03-04

Danfoss A/S CG-TEC EMC-Laboratorium:

- ref. TR 084Z029, valid 03-12-02
- ref. TR 084Z030, valid 04-03-24
- ref. TR 084Z031, valid 04-03-24

Danfoss: 4-969482/K, dated 2004-04-23.

Danfoss EMC-Lab Technical report N°: TR DIV 084Z-032 dated 04/11/2004.

For E0 version:

- Force Technology, Test Report No. 121-29917-1,rev.2 dated 2022-02-16.

4. APPLICATION / LIMITATION:

4.1 - BUREAU VERITAS Rules for the Classification of Steel Ships.

4.2 - Approval valid for ships intended to be granted with the following additional class notations: **AUT-UMS, AUT-CCS, AUT-PORT and AUT-IMS**.

4.3 - The equipment, once installed on board ship, is to be tested in accordance with the above referred Regulations under the supervision of a Society's Surveyor.

4.4 - BUREAU VERITAS Environmental Category, **EC Code: 43S**.

4.5 - Equipment covered by this Type Approval certificate has been tested according to requirements of IACS UR E10 rev7.

5. PRODUCTION SURVEY REQUIREMENTS:

5.1 - The **Temperature Transmitters** are to be supplied by **DANFOSS A/S** in accordance with the type described in this certificate and Bureau Veritas Rules for the Classification of Steel Ships.

5.2 - This type of product is within the category HBV of Bureau Veritas Rule Note NR320 and as such does not require a BV product certificate.

5.3 - **DANFOSS A/S** has to make the necessary arrangements to have its works recognised by Bureau Veritas in compliance with the requirements of NR320 for HBV products.

5.4 - For information, **DANFOSS A/S** has declared to Bureau Veritas the following production site(s):

Danfoss (Tianjin) Ltd.
No.9 Quanhui Road.,
Wuqing Development Area,
TIANJIN
CHINA

6. MARKING OF PRODUCT:

6.1 - Trade name.

6.2 - Date of manufacture and serial number.

6.3 - Equipment type or model identification under which it was type-tested.

7. OTHERS:

7.1 - It is **DANFOSS A/S**'s responsibility to inform shipbuilders or their sub-contractors of the proper methods of fitting, use and general maintenance of the approved equipment and the conditions of this approval.

7.2 - This Certificate supersedes the Type Approval Certificate N° 14159/D0 BV issued on 06 April 2020 by the Society.

***** END OF CERTIFICATE *****