



Marine & Offshore

Certificate number: 06839/F0 BV

File number: AP 2914

Product code: 3812H

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

www.veristar.com

TYPE APPROVAL CERTIFICATE

This certificate is issued to

DANFOSS A/S

NORDBORG - DENMARK

for the type of product

TEMPERATURE SENSORS / PROBES / TRANSDUCERS

RTD Temperature Sensors

Type: MBT 5250, MBT 5252, MBT 5260 and MBT 5253.

Requirements:

BUREAU VERITAS Rules for the Classification of Steel Ships.
IEC 60751 (2008)

EC Code: 33/43

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: 01 Mar 2027

For Bureau Veritas Marine & Offshore,

At BV FREDERICIA, on 01 Mar 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=eawg1ue6gw>

BV Mod. Ad.E 530 June 2017

This certificate consists of 3 page(s)

THE SCHEDULE OF APPROVAL

1. PRODUCT DESCRIPTION :

- Product model or type designation:

Type: MBT 5250, MBT 5252, MBT 5260 and MBT 5253

- Product description:

RTD Temperature Sensors for measurements and regulation in piping systems and refrigeration plants on ships.

1.1 - Common Specifications:

RTD Type : Pt100 or Pt1000 or Other (1 sensing element - 2/3/4 wires)
 Class : A or B according to IEC 60751
 Measuring Range : -50°C to 400°C (Typically -50°C to +200°C)
 Ingress Protection : IP54 to IP68

1.2 - MBT Products:

| Type | Data Sheet (Standard Type) | Engineering Sheets (Customized Type) | Remark |
|-----------------|--|---|--|
| MBT 5250 Series | IC.PD.P30.I1.02 | 090428-5 | Interchangeable Measuring Insert DIN 43650 Plug |
| MBT 5252 | IC.PD.P30.I1.02 | - | Interchangeable Measuring Insert With Connection Head |
| MBT 5260 Series | IC.PD.P30.I1.02 Specification key: 084R2034 ver. 04 | 100125-5 | Fixed Measuring Insert DIN 43650 Plug |
| MBT 5253 | - | 090206-5 110119-5, 110119-6, 110119-7 Specification key: 084R2016 ver.2 | Interchangeable Measuring Inser Cable |

2. DOCUMENTS AND DRAWINGS:

According to documents filed in AP 2914.

3. TEST REPORTS:

DANFOSS A/S:

- Test report reviewed by the Society on 29.01.97.
- Vibration and Chock test on MBT 5252, Report No: 2006-2299, dated 2006-06-20.

For modification F0 version:

Force:

- EMC Marine type testing of high temperature sensors Test report No. 117-34687-2, dated 01-04-2020.

4. APPLICATION / LIMITATION:

- 4.1 - BUREAU VERITAS Rules for the Classification of Steel Ships.
- 4.2 - Approval also valid for ships to be granted with the notations: **AUT-UMS, AUT-CCS, AUT-PORT and AUT-IMS.**
- 4.3 - BUREAU VERITAS Environmental Category, **EC Code: 33/43**
- 4.4 - The sensors with a protection tube which length is above 250 mm to 500 mm shall not be fitted on diesel engines, compressors or other equipment or spaces where severe vibration conditions are experienced.
- 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 above products are to be supplied by **DANFOSS A/S** in compliance with the type described in this certificate.
- 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 - **DANFOSS A/S** has declared to Bureau Veritas the following production site(s):

**Danfoss (Tianjin) Ltd-Industrial Automation Business Unit
 No.9 Quanhui Rd.,
 Wuqing Development Area,
 Tianjin
 TIANJIN
 CHINA**

6. MARKING OF PRODUCT :

- Maker's name or trade mark,
- Serial number of the units,
- Equipment type number 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 No.: 06839/E0 BV issued on 01 Nov 2016 by the Society.

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