



MARINE DIVISION

Certificate number: 06839/D1 BV

File number: AP 2914

Product code: 3812H

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 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

This certificate is issued to attest that BUREAU VERITAS 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: 07 Sep 2016

For BUREAU VERITAS,

At BV FREDERICIA, on 27 Nov 2013,

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. 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 Division 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 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 SCHEDULE OF APPROVAL

1. 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 Inset 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 Insert 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

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.

5. PRODUCTION SURVEY REQUIREMENTS:

- 5.1 - The **MBT 5250/5252/5260/5253** Sensors 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.
 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:

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

6. MARKING OF PRODUCT:

- Trade name
- Date of manufacture and serial number
- Sensor type or model identification under which it was type-tested.

7. OTHERS:

7.1 - This approval is given on the understanding that the Society reserves the right to require check tests to be carried out on the units at any time and that **DANFOSS A/S, Nordborg - DENMARK**, will accept full responsibility for informing shipbuilders, ship-owners or their sub-contractors of the proper methods of use and general maintenance of the sensors and the conditions of this approval.

7.2 - This certificate supersedes the Type Approval Certificate N° 06839/D0 BV issued on 07/09/2011 by the Society.

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