



TYPE APPROVAL CERTIFICATE
No. ELE061415XG

This is to certify that the product below is found to be in compliance with the applicable requirement of the RINA type approval system.

<i>Description</i>	Temperature sensors
<i>Type</i>	MBT 5250 MBT 5252 MBT 5253 MBT 5260 MBT 5310 MBT 5410 MBT 5722.
<i>Applicant</i>	DANFOSS A/S Nordborgvej 81 DK-6430 Nordborg (office E14-S1) DENMARK
<i>Manufacturer</i>	DANFOSS A/S
<i>Place of manufacture</i>	Nordborgvej 81 DK-6430 Nordborg (office E14-S1) DENMARK
<i>Reference standards</i>	Rules for the Classification of Ships - Part C - Machinery, Systems and fire protection - Ch.3, Sect.6, Tab.1.

Issued in **HAMBURG** on **November 3, 2015**. This Certificate is valid until **November 3, 2020**



RINA Services S.p.A.
Giuseppe Russo

This certificate consists of this page and 1 enclosure



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Enclosure - Page 1 of 1

MBT 5250 MBT 5252 MBT 5253 MBT 5260 MBT 5310 MBT 5410 MBT 5722.

Description:

- Stern tube sensor type MBT 5722 (up to 200°C media temperature with Pt 100 resistance element)
- Temperature room sensor and temperature transmitter type MBT 5410 (temperature range from -50 to +70°C)
- Marine bearing temperature sensor type MBT 5310 with plug directly mounted on the top of the sensor, bayonet connection for monitoring of bearing temperatures where there is risk of overheating , such as : Wind turbines, engines and generators
- Marine bearing temperature sensor type MBT 5310 with cable (wire or plug).
The cable gland is mounted in a connection plug, which is mounted in the engine wall, so that the sensor can be taken out through the engine wall and that the cable can go through the engine wall as well.
 - Based on Pt 100 / Pt 1000 technology for use up to 200°C.
 - Spring loaded to ensure good contact with the bearing and insertion length adjustable from 60 to 300 mm
- Universal temperature sensor with interchangeable insert and bayonet connector, type MBT 5250, 5260 (up to +200°C media temperatures)
- Temperature sensor with interchangeable insert type MBT 5252 (up to +400°C media temperatures)
- Temperature sensor cable mounted type MBT 5253 (temperature range: -50°C to 200°C)

Reference Documents:

- Techn. Brochure: Stern tube sensor, type MBT 5722 IC.PD.P30.M4.02 / 520B4982
- Danfoss Techn. Brochure IC.PD.P30.J5.02 / 520B4990 (MBT 5410)
- Danfoss Data Sheet IC.PD.P30.I3.02 / 520B4953 (MBT 5250, MBT 5260, MBT 5252)
- MBT 5250.zip, MBT 5260.zip, MBT 5253.zip, MBT 5310.zip (Engineering sheets und drawings)
- Danfoss Data Sheet IC.PD.P30.Q2.02
- Danfoss Data Sheet IC.PD.P30.Q3.02-A0
- Danfoss Engineering Sheet, valid serial no. 080922-5 and 08922-6
- Danfoss Drawing IA-OTS Marine approval MBT 5310, dated of 2015-03-06

Test Reports:

Danfoss Test Report No.:2008-2142, dated 2008-03-11

DELTA Test Report Task reference T204302, Cold Test, Damp Heat Cyclic Test, Shock Test

(The vibration test of task reference T204302 is not valid because of wrong parameters. 0,7g instead of 4g)

DELTA Test Report Task reference T205006, Vibration Test , dated 2013-03-15

(The renewed vibration test of task reference T204302)

Remark:

Following inserts for temperature are to be used:

- MBT 150 for sensors type MBT 5250
- MBT 152 for sensors type MBT 5252
- MBT 153 for sensors type MBT 5253
- Fixed insert for MBT 5260

Additional Place of Production for the MBT 5250, 5252, 5253, 5260 and 5310:

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

This certificate annuls and replaces the previous certificate ELE028413XGXG.

HAMBURG November 3, 2015

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