



TYPE APPROVAL CERTIFICATE FOR AUTOMATIC DEVICES AND EQUIPMENT

Certificate No. TA22333M

This is to certify that the undernoted product(s) has/have been approved in accordance with the requirements specified in Chapter 1, Part 7 of "Guidance for the Approval and Type Approval of Materials and Equipment for Marine Use" and the relevant Society's Rules.

This certificate is issued to

Applicant:

Danfoss A/S

Nordborgvej 81, 6430 Nordborg, Denmark

Manufacturer:

Danfoss (Tianjin) Ltd.,

No.9 Quanhui Road, Wuqing Development Area,

301700 Tianjin, China

Product description:

Temperature sensor

Model:

MBT 5560, 5550

Approval No.:

05A002

Valid until:

26 January 2026

This certificate is subject to the conditions specified in the attached sheet(s).

Issued at Tokyo on 20 June 2022.

S. Oishi

General Manager

Machinery Department

Note: 1. This certificate has been issued due to addition of new model.

2. The manufacturer, if desired, is requested to apply to the Society for renewal prior to the expiration date.

NIPPON KAIJI KYOKAI

Attached sheet -1/2 to the Certificate No. TA22333M

Specification & documents:

1. Particulars:

Power supply:

10 - 30 VDC for 4-20mA

4.75 - 8 VDC for ratiometric (5 VDC Nom.)

Temperature Range:

-50 - 200 deg C (MBT 5560)

-15 - 200 deg C (MBT 5550)

2. Documentation and Test Reports:

084R6015 ver.00

TR084Z029

TR084Z030

TR084Z031

4-969482 Kto04-02-27

Technical brochure (IC.PD.P30.F6.02)

Test Report No 196/NZL/NBW/2010/O

Letter of Q-release to DANFOSS (Tianjin) LTD, (2012-07-10)

Documents for Q-release 09-07-2012

Data Sheet (MBT 5560)

(Doc No. AI202286432128en-000901)

FORCE TEST REPORT

(Report No. 121-23443-1, 2021-03-11)

Data Sheet (MBT 5550)

(Doc No. AI391832931068en-000102)

FORCE TEST REPORT

(Report No. 121-29917-1, 2022-01-26)

FORCE TEST REPORT

(Report No. 121-32519-1, 2022-01-06)

- To be continued -

NIPPON KAIJI KYOKAI

Attached sheet -2/2 to the Certificate No. TA22333M

Test items & approval conditions:

1. Test items:

(Applied testing items are marked with X.)

ENVIRONMENTAL TESTS (IACS UR E10 Rev.7 basis)		Mark
External examination		X
Operation test and performance test		X
Electric power supply failure test		X
Power supply fluctuation test	Electric	X
	Pneumatic and Hydraulic	
Insulation resistance test		X
High voltage test		X
Pressure test (Pneumatic and Hydraulic)		
Dry heat test (Temperature $85^{\circ}C \times 16$ hours)		X
Damp heat test		X
Vibration test (Acceleration $\pm 4.0 \text{g} \times 1.5 \text{ hours}$)		X
Inclination test		
Cold test (Temperature -50° C × 16 hours)		X
Salt mist test		
Electrostatic discharge immunity test		X
Radiated radio frequency immunity test		X
Conducted low frequency immunity test		X
Conducted high frequency immunity test		X
Burst / Fast transient immunity test		X
Surge immunity test		X
Radiated emission test		X
Conducted emission test		X
Flame retardant test		X

2. Approval condition:

The products are not allowed to be installed on open deck.