



NIPPON KAIJI KYOKAI

**TYPE APPROVAL CERTIFICATE
FOR AUTOMATIC DEVICES AND EQUIPMENT**

Certificate No. TA16361M

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

Manufacturer and	Danfoss A/S
Place of Manufacturing:	Nordborgvej 81, Dk-6430 Nordborg, Denmark Danfoss (Tianjin) Ltd, Wuqing Development Area No 9, Quanhui Road 301700 Tianjin China
Product description:	Pressure Transmitter
Model:	MBS3100/3150, 2100/2150, 3300/3350
Approval No.:	99A105
Valid until:	18 May 2021

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

Issued at Tokyo on 19 May 2016.


Y. Shibata
General Manager
Machinery Department



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

Specification & documents:

1. Particulars: Power supply: DC 9~32V(DC4, 75-8,0V radiometric)
Output Signal: 4-20mADC, 0-5/1-5/1-6/0-10VDC or 10-90% of power supply
2. Operating temp.: -40~85°C (MBS3100/3150) or -40~125°C (MBS2100/2150 and 3300/3350)
3. Measuring range: 0 - 0.1 to 0 – 60MPa
4. Components and reference drawings:

Component (Type)	Drawings
MBS 3100	060R3050 Sh.1/Sh.2, 06C0335 Sh.01, 060G0215, 060C0337 Sh.1, 060G0299 Sh.2, 060G0319 Sh.TM1
MBS 3150	
MBS 2100	IC.PD.P21.O2.02 – 520B4354
MBS 2150	
MBS 3300	IC.PD.P21.O2.02/520B4354
MBS 3350	

5. Documentation and Test Reports:

- Danfoss EMC-lab. test report 2008-9027 (15 Sep. 2008)
 Danfoss damp heat and vibration test report (22 Feb. 2008)
 Danfoss performance test report (18 June 2008)
 Danfoss overpressure test report (3 July 2008)
 Technical brochure (IC.PD.P20.06.02 - 520B4866)
 Test Report No 196/NZL/NBW/2010/O

Comparison old and new versions

Test items & approval conditions:

1. Test items:

(Applied testing items are marked with X.)

ENVIRONMENTAL TESTS		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)		X
Dry heat test (Temperature 85°C × 22 hours)		X
Damp heat test (Temperature 55°C, Humidity 95%, 12 hours, 6 cycles)		X
Vibration test (Acceleration ±20.0g × 2 hours)		X
Inclination test		X
Cold test (Temperature -40°C × 16 hours, -50°C × 2 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 decks.

