



Type Approval Certificate Extension

This is to certify that Certificate No. 99/00087(E2) for the undernoted products is extended and renumbered as shown.

This certificate is issued to:

PRODUCER	Danfoss A/S		
PLACE OF PRODUCTION	DK-6430 Nordborg Denmark	Danfoss (Tianjin) No. 9 Quanhui Road, Wuqing Area Tianjin P.R.C	
DESCRIPTION	Pressure Transmitters with outputs for current (4-20 mA), voltage (0-5V, 1-5V, 1-6V, 0-10V) or ratio-metric (10-90% of supply voltage), temperature compensated, measuring either gauge or absolute pressure.		
TYPE	MBS 2100	standard	
	MBS 3100	"	
	MBS 3300	"	
	MBS 2150	with integrated puls-snubber	
	MBS 3150	"	
	MBS 3350	"	
	MBS 9300	Low press pressure transmitter - bidirectional	
APPLICATION	Marine, Offshore and Industrial use in environmental categories ENV1, ENV2, ENV3*, ENV4 and ENV5 as defined in LR Test Specification No1: 2002, where the test specification is satisfactory for the intended operation.		
	*) ENV1; ENV2 & ENV3 only are applicable for MBS 9300.		
STANDARD	Manufacturer's Specification		
RATINGS	-70mbar - 70 mbar; 0-1 Bar to 0-600 Bar		
ADDITIONAL TESTS	Low Temperature:	-40°C	
	Enclosure Rating:	Plug type	IP65
		Flying lead type-	IP 67

Certificate No.	99/70087(E3)
Issue Date	23 September 2014
Expiry Date	22 September 2019
Sheet	1 of 2

Lloyd's Register EMEA
Strandvejen 104A, DH-2900 Hellerup


Jacob Munk Plum
Copenhagen Design Support Office

"This Certificate is not valid for equipment, the design, ratings or operating parameters of which have been varied from the specimen tested. The manufacturer should notify Lloyd's Register EMEA of any modification or changes to the equipment in order to obtain a valid certificate."

The attached Design Appraisal Document No.TA99/70087(E3) and its supplementary Type Approval Terms and Conditions form part of this Certificate.

All other details remain as the previous Certificate No.99/70087(E2) to which this extension should be attached.

Certificate No.	99/70087(E3)
Issue Date	23 September 2014
Expiry Date	22 September 2019
Sheet	2 of 2

*Lloyd's Register EMEA
Strandøvejen 104A, DH-2900 Hellerup*



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Copenhagen Design Support Office



Lloyd's
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Issue number 01

DESIGN APPRAISAL DOCUMENT

Date 23 September 2014	Quote this reference on all future communications TA/I1104421/1300653/PEH/jmp
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LLOYD'S REGISTER TYPE APPROVAL SYSTEM, 2002.

Issued to: Danfoss A/S Nordborg - Denmark

for: Pressure Transmitter types: MBS 2100/2150; MBS 3100/3150; MBS 3300/3350 and MBS 9300

TYPE APPROVAL CERTIFICATE No. 99/70087(E3)

The undernoted documents have been reviewed for compliance with the requirements of the Lloyd's Register Type Approval System, 2002 and this Design Appraisal Document forms part of the Certificate.

APPROVAL DOCUMENTATION

Request form for extension of cert. No 99/70087E3	17.06.2013
Danfoss Doc - Marine Approval testplan - 'MBS9300 milli bar transmitter'	07.01.2013
Danfoss Draw No: 064R5004 'MBS9300 Appr drawing'	10.12.2012
Danfoss Doc - Marine Approval of Danfoss MBS9300	-- .01.2013
Danfoss Data Sheet No IC.PD. P21.X1.02-520B5413 on Low pressure transmitter for marine applications, MBS9300	

TEST REPORTS

DELTA, Task ref. T204328-2 'Dry heat test of MBS9300' to 70 deg. C for 16 hrs	21.02.2013
Danfoss Tech Report no.064G0571-01 'MBS9300 Visual inspection, 064G5203, 0-100 mbar 4-20mA -Marine Approval IACS E10-1	03.01.2013
Danfoss Tech Report no. TR064G0547-01 'MBS9300 Performance test on 064G5203 0...100 mbar, 2-20 mA.	11.01.2013
Danfoss RC EMC-Lab Tech report EL-RDSFD 'MBS6300 & MBS9300' IACS E10 'Marine EMC test'	17.04.2013
DELTA Task ref T204328 'Dry Heat Test of MBS9300' IACS E10-IEC60068-2-2	21.02.2013

All other conditions remain as listed to the Design Appraisal Document of the previous certificate no. TA99/70087(E2).


Jacob Munk Plum
Surveyor, Electrical Section

Supplementary Type Approval Terms and Conditions

Type Approval certifies that a representative sample of the product(s) referred to herein has/have been found to meet the applicable design criteria for the use specified herein. It does not mean or imply approval for any other use, nor approval of any product(s) designed or manufactured otherwise than in strict conformity with the said representative sample.

Type Approval is based on the understanding that the manufacturer's recommendations and instructions and any relevant requirements of the Rules and Regulations are complied with.

Type Approval does not eliminate the need for normal inspection and survey procedures required by the Rules and Regulations.

Lloyd's Register EMEA reserves the right to cancel or withdraw this Type Approval Certificate in accordance with the Lloyd's Register Type Approval System Procedure.

Lloyd's Register Group Limited, its affiliates and subsidiaries and their respective officers, employees or agents are, individually and collectively, referred to in this clause as the 'Lloyd's Register'. Lloyd's Register assumes no responsibility and shall not be liable to any person for any loss, damage or expense caused by reliance on the information or advice in this document or howsoever provided, unless that person has signed a contract with the relevant Lloyd's Register entity for the provision of this information or advice and in that case any responsibility or liability is exclusively on the terms and conditions set out in that contract.

Part 3
Transmitters/Transducers (Part 3)

Producer/Licence No.	Item Description	Technical Details	Category/ Additional Tests	Remarks	Cert. No.
Danfoss A/S, DK-6430 Nordborg Denmark.	Pressure Transmitter Types: MBS9300 MBS2100 standard/ MBS2150 with puls-snipper MBS3100 standard/ MBS3150 with puls-snipper MBS3300 standard/ MBS3150 with puls-snipper	<p>MBS9300: Power supply Un: 9-32VDC Elect conn: Pg9 plug Press range -70mbar-70 mbar bidirectional</p> <p>MBS2100/2150: Power Supply Un: 5VDC Elect. conn: plug or flying lead Press range: -1-1.5 to 0-600 bar</p> <p>MBS3100/MBS3150: Power supply Un: 12.5-32VDC Elect. conn: plug: Pg11, Pg9 or Pg13.5 Press ranges: 0-1 bar to 0-600 bar</p> <p>MBS3300/MBS3150: Power supply Un: 15-30VDC/9-34VDC Elect conn: Pg plug or flying lead Press ranges: -1- 1.5 to 0- 600 bar</p> <p>Battery supplied: voltage limited to 20-23VDC (MBS3300) voltage limited to 12.0-26 VDC (MBS3350) Output signal: 4-20mA; 0-5V/1-5V /1-6V/ 0-10V or ratio-metric 10-90% of supply voltage. Medium temperature max 125°C. Temperature compensated (MBS3300/3350, 4-20mA to 100°C.)</p>	<p>ENV1 ENV2 ENV3 ENV4 ENV5 ENV5 (2002) for installation in "Bridge and Deck Zone" and in "General Power Distribution Zone".</p> <p>Low temp: -40°C Ingress Protection: Plug type - IP65 Flying lead type - IP67</p>	Expires: 22 September 2019	99/70087(E3)

