



Marine & Offshore
Division

Certificate number: 06095/F0 BV

File number: AP 2751

Product code: 3881H

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

PRESSURE CONTROLLERS

Pressure Switches

Types: MBC 5100 and MBC 5100 Wårtsilå.

Requirements:

BUREAU VERITAS Rules for the Classification of Steel Ships.

EC Code: 33S

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: 01 Nov 2021

For BUREAU VERITAS,

At BV FREDERICIA, on 01 Nov 2016,

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 & Offshore 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 electronic version is available at: <http://www.veristarnb.com/veristarnb/jsp/viewPublicPdfTypec.jsp?id=uqybjkrlf4>

BV Mod. Ad.E 530 October 2014

This certificate consists of 3 page(s)

THE SCHEDULE OF APPROVAL

1. PRODUCT DESCRIPTION :

- Product model or type designation:

Type: MBC 5100

- Product description:

MBC 5100 Pressure Switches are intended for alarm indication, shut-down, control and diagnostic in many applications.

Main Specifications:

Max. pressure : Up to 400 bar

Contact Switch : SPDT

Contact Load : 0.5A - 250 V (AC), 12W - 125V (DC)

Ingress Protection : IP 65

2. DOCUMENTS AND DRAWINGS:

According to:

- Industrial notes IK.21.C2.02.
- Data Sheets DKACT.P10.C2.02 & IC.PD.P10.A1.02-520B1771.
- Drawings N°s: 061R9000 & 061B0613 & 061B0647 ver.00.
- Instructions ref. IC.PI.P10.A1.52-520B1769.
- MBC - Design changes dated 13/Jun./08

filed in AP 2751.

3. TEST REPORTS:

- Test report N° 4-23160 dated February 1995. Classification Societies witnessing to test had been carried out.
- Danfoss test report N° J.no.: 20032124 dated 14/Mar./2003.
- Danfoss test report N° J.no.: 20042163E-6 dated 18/May/2004.
- Danfoss test report N° no.: 2007-2421 dated 26/Nov./2007.

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: 33S**

4.4 - The equipment, once installed on board ship, is to be tested in accordance with the above referred Regulations under the supervision of a Society's Surveyor.

5. PRODUCTION SURVEY REQUIREMENTS :

5.1 - The above products are to be supplied by **DANFOSS A/S** in compliance with the type described in this certificate.

5.2 - This type of product is within the category HBV of Bureau Veritas Rule Note NR320 and as such does not require a BV product certificate.

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.

5.4 - **DANFOSS A/S** has declared to Bureau Veritas the following production site(s):

Danfoss Sp z.o.o
Ul. Chrzanowska 5
PL-05-825 Grodzisk Mazowiecki
POLAND

6. MARKING OF PRODUCT :

- Maker's name or trade mark,
- Serial number of the units,
- Equipment type number or model identification under which it was type-tested.

7. OTHERS :

7.1 - It is **DANFOSS A/S, Nordborg - Denmark**'s responsibility to inform shipbuilders or their sub-contractors of the proper methods of fitting, use and general maintenance of the approved equipment and the conditions of this approval.

7.2 - This Certificate supersedes the Type Approval Certificate No.: 06095/E0 BV issued on 25 Oct 2011, by the Society.

*** END OF CERTIFICATE ***