



Marine & Offshore

Certificate number: 11676/E0 BV

File number: AP 3420

Product code: 3831H

*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*

**TEMPERATURE CONTROLLERS**

Temperature controls, Type MBC 8100

**Requirements:**

Bureau Veritas Rules for the Classification of Steel Ships.

EC Code: 32/33

*This certificate is issued to attest that Bureau Veritas Marine & Offshore 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: 30 Jan 2028**

**For Bureau Veritas Marine & Offshore,**

At BV FREDERICIA, on 30 Jan 2023,

Jesper JENSEN

***This certificate was created electronically and is valid without signature***



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 Marine & Offshore. 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 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 Marine & Offshore 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.veristarm.com/veristarnb/jsp/viewPublicPdfTypepec.jsp?id=ueidltqwmh>

BV Mod. Ad.E 530 June 2017

This certificate consists of 3 page(s)

## THE SCHEDULE OF APPROVAL

### 1. PRODUCT DESCRIPTION:

#### Temperature controls, Type MBC 8100.

Main specification:

Types	<b>Rigid sensor, capillary tube, armoured capillary tube</b>
Setting range	<b>- 10 to +200° C</b>
Switch	<b>Single-pole changeover switch (SPDT)</b>
Contact load	<b>Alternative current: inductive 0.5A, 250 V, AC15 Direct current: 12 W, 125 V, DC 13</b>
Ambient temperature	<b>- 40 to +70° C</b>
Enclosure protection index	<b>IP65</b>

### 2. DOCUMENTS AND DRAWINGS:

Danfoss A/S:

- Mechanical drawings N° 061B9014 Ver. 02, 061R9014 ver. 00, 061B8301 ver. 03 & ver. 04.
- Data sheet DKACTION.PD. P10.J.1.02.
- Data Sheet IC.PD.P10.D2.02-520B2392.
- Technical brochure - doc. No. IC.PD.P10.D5.02/520B4846, issued on 12-2011.

**For E0 version:**

- Datasheet No. AI224986437571en-000901 dated 2021.02

### 3. TEST REPORTS:

- Danfoss test report N° MBC 3-921622, KIJ010805(01) dated 15/11/01.
- Danfoss test report N° J.no.:20042053-E 1
- Danfoss test report N° J.no.:20042053-E 3
- Danfoss test report N° J.no.:20042053-E 4
- Danfoss test report N° no.:2008-2262 dated 28/Apr./2008.

**For E0 version:**

- Test Report No. 274441-1, dated 10.06.2014

### 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 notation: **AUT-UMS, AUT-PORT, AUT-CCS and AUT-IMS.**
- 4.3 - BUREAU VERITAS Environmental Category, **EC Code: 32/33**

### 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 - For information, **DANFOSS A/S** has declared to Bureau Veritas the following production site:

**DANFOSS Poland Sp. z o.o.**  
**Ul. Chrzanowska 5**  
**05-825 GRODZISK MAZOWIECKI**  
**POLAND**

### 6. MARKING OF PRODUCT:

- Trade name.
- Date of manufacture and serial number.
- Equipment type or model identification under which it was type-tested.

### 7. OTHERS:

- 7.1 - It is **DANFOSS A/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. 11676/D1 BV issued on 09 May 2019 by the Society.

**\*\*\* END OF CERTIFICATE \*\*\***