



# DET NORSKE VERITAS

## TYPE APPROVAL CERTIFICATE

CERTIFICATE NO. **A-13570**

This is to certify that the  
**Temperature Switch**

with type designation(s)  
**MBC 8100**

Issued to  
**Danfoss A/S**  
**NORDBORG, Denmark**

is found to comply with  
**Det Norske Veritas' Rules for Classification of Ships, High Speed & Light Craft and Det Norske Veritas' Offshore Standards**

Application  
**Location classes:**

<b>Temperature</b>	<b>D</b>
<b>Humidity</b>	<b>B</b>
<b>Vibration</b>	<b>B</b>
<b>EMC</b>	<b>(N/A)</b>
<b>Enclosure</b>	<b>B/IP65</b>

This Certificate is valid until **2017-12-31**.

Issued at **Høvik** on **2014-01-09**

DNV local station: **Fredericia**

Approval Engineer: **Nils Jarem**

for **Det Norske Veritas AS**

.....  
**Odd Magne Nesvåg**  
**Head of Section**

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid.  
The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.

If any person suffers loss or damage which is proved to have been caused by any negligent act or omission of Det Norske Veritas, then Det Norske Veritas shall pay compensation to such person for his proved direct loss or damage. However, the compensation shall not exceed an amount equal to ten times the fee charged for the service in question, provided that the maximum compensation shall never exceed USD 2 million. In this provision "Det Norske Veritas" shall mean the Foundation Det Norske Veritas as well as all its subsidiaries, directors, officers, employees, agents and any other acting on behalf of Det Norske Veritas.

## Product description

Temperature switches in block construction.  
Series MBC 8100 with ranges between -10...30 Deg.C and 60...150 Deg.C.

## Manufactured by

Danfoss Poland Sp. z o.o  
Grodzisk Mazowiecki  
Poland

## Application/Limitation

The Type Approval covers hardware listed under Product description. When the hardware is used in applications to be classed by DNV, documentation for the actual application is to be submitted for approval by the manufacturer of the application system in each case. Reference is made to DNV Rules for Ships Pt.4 Ch.9 Control and Monitoring Systems and DNV-OS-D202 Automation, Safety and Telecommunication Systems.

## Type Approval documentation

MBC 8100 Type Approval binder dated 21-04-2006, containing:

- Test plan/ test report with appendices
- Mechanical drawings: 061B9014 v.07, 061R9014 v.03, 061B9015 v. 03
- Data sheets: IC.PD.P10.D6.02/520B5807 dated 11-2013

A-11794 Retention Survey Report, DNV Gdańsk 2013-12-13.

## Tests carried out

Applicable tests according to Standard for Certification No. 2.4, April 2006.

## Periodical assessment

The scope of the periodical assessment is to verify that the conditions stipulated for the type are complied with, and that no alterations are made to the product design or choice of systems, software versions, components and/or materials.

The main elements of the assessment are:

- Ensure that type approved documentation is available
- Inspection of factory samples, selected at random from the production line (where practicable)
- Review of production and inspection routines, including test records from product sample tests and control routines
- Ensuring that systems, software versions, components and/or materials used comply with type approved documents and/or referenced system, software, component and material specifications
- Review of possible changes in design of systems, software versions, components, materials and/or performance, and make sure that such changes do not affect the type approval given
- Ensuring traceability between manufacturer's product type marking and the type approval certificate

Periodical assessment is to be performed at least every second year and at renewal of this certificate.

END OF CERTIFICATE