

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Temperature Switch**with type designation(s)
MBC 8100

Issued to

Danfoss A/S
Nordborg, Syddanmark, Denmark

is found to comply with

DNV GL rules for classification – Ships, offshore units, and high speed and light craft**Application :****Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.****Location classes:**

Temperature	B
Humidity	B
Vibration	B
EMC	(N/A)
Enclosure	B/IP65

Issued at **Høvik** on **2019-08-29**for **DNV GL**This Certificate is valid until **2024-08-28**.DNV GL local station: **Denmark CMC**Approval Engineer: **Nils Jarem**

Trond Sjøvåg
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.



Product description

Series MBC 8100 Temperature switches in block construction.

Types:	capillary tube, armoured capillary tube, rigid sensor
Setting ranges:	-10...30°C up to 100...200°C
Max. length of rigid sensor:	75 mm
Max. length of capillary tube:	2000 mm
Process connection:	screw M18 x 1.5
Electrical connection:	Pg 9, Pg 11 or Pg 13.5 plug (DIN 43650)
Microswitch	c/o 0.5 A, 250 V (AC 15) or c/o 12 W, 125 V (DC 13)

Manufactured by

Danfoss Poland Sp. z o.o.
Ul. Chrsanowska 5
05-825Grodzisk Mazowiecki
Poland

Approval conditions

The Type Approval covers hardware listed under Product description. When the hardware is used in applications to be classed by DNV GL, 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 GL rules for classification of ships Pt.4 Ch.9 Control and monitoring systems.

Type Approval documentation

- Test Reports: No. 20042053-E, -E1, -E2, -E3 and No. MBC 3-921622 of DTC
- Mechanical drawings: 061B9014 v.07, 061R9014 v.03, 061R9015 v.03
- Data sheets: IC.PD.P10.D8.02 | 520B7816 dated 2017-02

Type approval renewal assessment report for 20 508 - 04 HH, dated 2019-08-28

Tests carried out

Applicable tests according to class guideline DNVGL-CG-0339, November 2016.

Marking of product

The products to be marked with:

- manufacturer name
- model name
- serial number
- power supply ratings

Job Id: **262.1-001594-4**
Certificate No: **TAA00002BB**

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 after 2 years and after 3.5 years. A renewal assessment will be performed at renewal of the certificate.

END OF CERTIFICATE