DNV·GL

Certificate No:
MEDB00004TE

EC-TYPE EXAMINATION CERTIFICATE (MODULE B)

Application of: Directive 2014/90/EU of 23 July 2014 on marine equipment (MED). This Certificate is issued by DNV GL SE based on the notification of the Federal Maritime and Hydrographic Agency of Germany.

This is to certify:

That the Sprinkler systems (limited to sprinkler heads)

with type designation(s)
MX3 and MX5

Issued to
Minimax GmbH & Co. KG
Bad Oldesloe, Germany

is found to comply with the requirements in the following Regulations/Standards:
Regulation **(EU) 2019/1397,**
item No. MED/3.28. SOLAS 74, Regulation II-2/7, II-2/10 & II-2/X3, FSS Code 8, 2000 HSC Code 7, IMO Res.MSC.44(65) and IMO MSC/Circ.912, MSC.1/Circ.1556

Further details of the equipment and conditions for certification are given overleaf.

This Certificate is valid until **2024-12-04**.
Issued at **Hamburg** on **2019-12-05**

DNV GL local station:
Hamburg

Approval Engineer:
Andrii Pishchanskyi

Notified Body
No.: **0098**

for **DNV GL SE**

Gerhard Aulbert
Head of Notified Body

The mark of conformity may only be affixed to the above type approved equipment and a Manufacturer's Declaration of Conformity issued when the production-surveillance module (D, E or F) of Annex B of the MED is fully complied with and controlled by a written inspection agreement with a Notified Body. The product liability rests with the manufacturer or his representative in accordance with Directive 2014/90/EU.
This certificate is valid for equipment, which is conform to the approved type. The manufacturer shall inform DNV GL SE of any changes to the approved equipment. This certificate remains valid unless suspended, withdrawn, recalled or cancelled.
Should the specified regulations or standards be amended during the validity of this certificate, the product is to be re-approved before being placed on board a vessel to which the amended regulations or standards apply.

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Job Id: **344.1-008810-1**
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Product description

MX3 and MX5
are sprinkler heads designed for use in sprinkler and water spraying systems. The sprinkler heads come in two types (flat spray (F) and spray (S) pattern sprinkler) and in two different orientations (pendent (P) and upright (U) sprinkler). The sprinkler heads also comes in three sizes (K57, K80 and K115). MX3 is a fast response (RTI < 50) sprinkler while MX5 is a standard response (RTI > 80) sprinkler.

The system is to be designed in accordance with FSS Code, Ch.8 (SOLAS) or IMO Res. MSC.44(65) (HSC). Only the sprinkler heads are type approved by this certificate. Pipes, couplings, valves and other systems components are subject to case by case approval.

The sprinkler heads are produced by Minimax GmbH & Co. KG in Bad Oldesloe, Germany.

Application/Limitation

The sprinkler heads shall be placed in an overhead position and spaced in a suitable pattern to maintain an average application rate of not less than $5\ ^{l}/_{min \cdot m^2}$ over the nominal area covered by the sprinklers.

For all applications

A. Working pressure range is between 0.5 and 12.5 bar.The minimum release pressure is 0.35 bar.
B. Maximum spacing between sprinklers depends on working pressure. Refer to manufacturer's data sheet for exact value.
C. Spinkler head body is made of brass, chrome-plated brass or stainless steel. Deflector is made of stainless steel. The sprinkler heads may be fitted with a 57°C bulb in sizes 3 or 5 mm. Bulbs with higher temperature ratings, but not more than 30°C over ambient temperature, are subject to approval in each case.
D. The pumps (or pump unit) shall be delivered with product certificate, whereas other system components are to be certified or inspected in accordance with Class Rules (or equivalent standard as specified by the Flag Administration).
E. Redundant pump arrangement is to be approved on a case by case basis.
F. Primary water supply shall be a fresh water. Exception is High Speed Craft (HSC), if Res. MSC.44(65) is applicable and Res. MSC.44(65), 9.1 is fulfilled;
G. Pipes, couplings and other components are regarded as "Class III" piping;
H. The pump unit and section valves shall be installed in a room having ambient temperature between 4 °C and 45 °C.

The following items are to be approved and filled by the Flag Administration for each project:

a) System arrangement plans including routing of pipes, location of sprinkler heads, sections valves, release stations and water supply.
b) Documentation of power supply and control system.
c) Specification of pipes, motors, pumps, valves and associated components.
d) Pressure drop calculations and water capacity calculations.
e) Design, installation, operation and maintenance manual.

Other documents:

- Inspection documents for other components as per EN 10204 shall be submitted to the site representative of the Flag Administration, if applicable.

Installation testing:

- System to be cleaned in accordance with routines outlined in maker's instructions.
- Automatic start and stop of pumps.
- Automatic change over from main to emergency electric supply.
- Other tests as required by Class Rules (pressure testing of piping, etc.) and according to maker's manual shall be carried out.

Periodical testing:
- The periodical testing shall comply with instructions from flag administration, statutory interpretations and maker's maintenance manual.
- Not less than 2 sprinkler heads of each type installed onboard shall be tested.

Type Examination documentation
1. VdS test reports No.:

Tests carried out
Tested as per EN 12259-1:1999 incl. A1:2001, A2:2004 and A3:2006.

Marking of product
The sprinklers are to be marked as per EN 12259-1, 5 and with the MED Mark of Conformity (see page 1) and USCG approval number, if applicable.