

EC-TYPE EXAMINATION CERTIFICATE (MODULE B)

Certificate no.:
MEDB0000AUA
Revision no.:
0

Application of: Directive 2014/90/EU of 23 July 2014 on marine equipment (MED). This Certificate is issued by DNV 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)

Dry Sprinkler VK

issued to

Minimax Technologies GmbH
Bad Oldesloe, Germany

is found to comply with the Implementing Regulation (EU) 2024/1975 for

Item no. **MED/3.28 (Row 2 of 2)**

according to the following requirements:

SOLAS 74 Reg. II-2/7, IMO Res. MSC.36(63)-(1994 HSC Code) 7, IMO Res. MSC.44(65), IMO Res. MSC.97(73)-(2000 HSC Code) 7, IMO Res. MSC.98(73)-(FSS Code) 8, IMO MSC/Circ.912, IMO MSC.1/Circ.1556, SOLAS 74 Reg. II-2/10, SOLAS 74 Reg. X/3

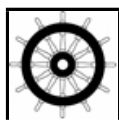
Further details of the equipment and conditions for certification are given overleaf.

Date of issue: **2025-07-15**

Expiry date: **2030-07-14**

DNV local unit:
Hamburg – CMC North/East

Approval Engineer:
Helge Bjørnara



Notified Body
no.: **0098**

for **DNV SE**

Christine Mydlak-Röder
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 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 This certificate remains valid unless suspended, withdrawn, recalled or cancelled.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.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to USD 300 000.

Product description

"Dry sprinkler VK",

are pendant sprinklers with standard responsiveness ($RTI > 80$) and nominal K-factor equal to 80. They are suitable for installation in zones threatened by frost. The sprinkler comes in three versions: VK1510 (plain sprinkler, DP), VK1550 (with rosette (standard), DP) and VK1590 (with housing for recessed mounting position, DPR).

The system is to be designed in accordance with IMO 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.

Application/Limitation

Approved for use as sprinkler heads in conventional fixed automatic sprinkler systems.

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 lpm/m² 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. Sprinkler head body and deflector are made of brass. The sprinkler heads may be fitted with a 68 °C bulb in size of 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 IMO Res. MSC.44(65) is applicable and IMO 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.) or a similar standard acceptable to the Flag Administration 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

Tests carried out

Tested according to EN 12259-1:1999 incl. A1:2001, A2:2004 and A3:2006.

Marking of product

The sprinklers shall be marked with manufacturer's name or trademark, model number, designation or equivalent marking, letter indicating the type of sprinkler and the mounting position, nominal operating temperature, and year of manufacture (EN 12259-1, Section 5) and the MED Mark of Conformity (see first page).