

Experts in fire protection

MINIMAX

Minifog water mist system Local application systems for ship engine rooms



WATER MIST

MINIFOG SYSTEM

Safety on board

The risk: ships require particularly high standards of safety on account of the particular conditions at sea. This applies especially to fire protection, and in particular in and around the engine room, which is home to fuel lines and other supply lines such as those that feed the main engines, auxiliary diesel engines, boiler, fuel separators and pumps – all these are typical areas of risk which must be considered when choosing an extinguishing system.

The International Maritime Organization (IMO) therefore recommends a permanent, quick activation fire-fighting system to protect equipment on board in addition to the total flooding fire suppression system. Minimax has developed the perfect solution to this special scenario: Minifog water mist system for ships.

Special impulse nozzles, with a minimum operating pressure of only four bar at the nozzle, create fine water. The tiny water particles heat up far more quickly than larger particles and the effect is the fire is cooled and extinguished more effectively.

The fact that the water droplets vaporize rapidly also impairs the supply of oxygen to the fire, thus smothering it.

Minifog water mist system also fulfills another major IMO requirement: its low water quantities and fine droplets minimize the risk of distortion in hot machine parts. This prevents damage and keeps the machines in normal operation. They do not need to be switched off during extinguishing, and the ship remains maneuverable.



How the system works

The impulse nozzles are arranged to suit the geometry of the equipment, as is the layout of the pipe network in the engine room, ensuring that the entire protected area is dependably in a water mist. Generally speaking, water is supplied by a space-saving fire extinguishing pump connected to the existing fresh water tank, which supplies the system with water for up to 20 minutes. Since there are no special requirements for the extinguishing water to fulfill, the pump can also be connected to the seawater / fire main system.



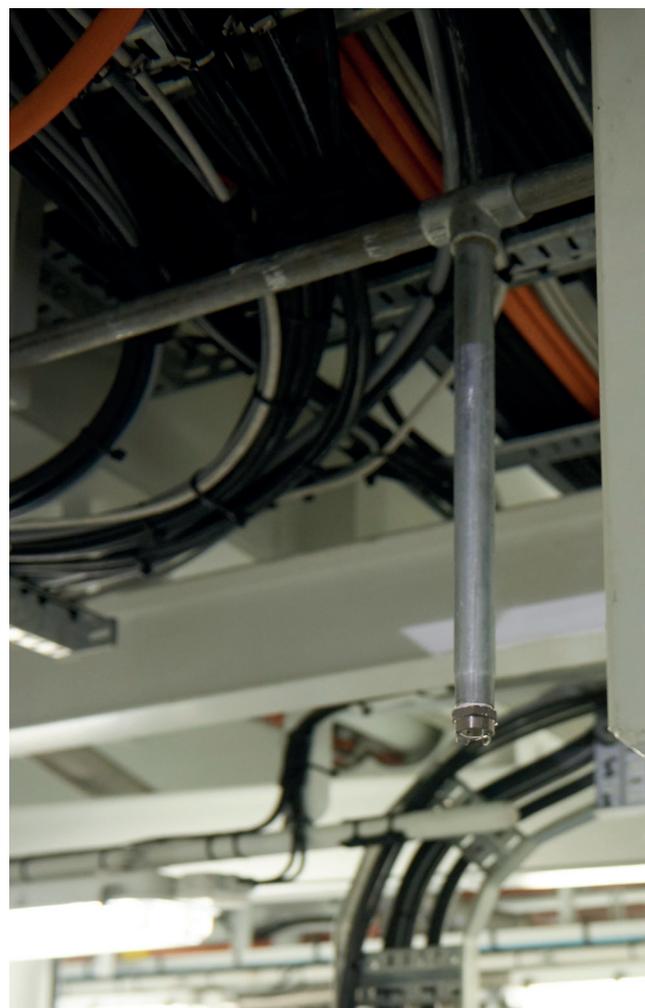
Controlling the extinguishing system

The fine water spray system is controlled by a Fire Detection and Control System (FDS), which fulfills all of the latest requirements. Fire detectors are connected in unison to the FDS and are strategically located in the engine room in order to quickly detect and combat a fire as soon as it breaks out. There are at least two fire detectors for each object being protected. Flame, smoke and heat detectors are installed, depending on the area of use and in accordance to class requirements.

The extinguishing procedure does not begin until two detectors register a fire independently from each other (dual detector dependency). The operating panel on the bridge is the most important component after the fire detectors. It is used as a display and also to control the system. For example, any information received on the FDS panel is displayed clearly in a user friendly way on its large-format screen. An additional remote control panel can be used to control as many as nine sections from a safe place near the equipment. This panel also displays the operating status of the equipment connected to it, such as the fire extinguishing pump, zone valves, and so on. The module cabinet houses the control units for each of the local zone valves, the pump starter, and – if stipulated – the primary and back-up power supply units. The FDS also incorporates a port for passing information on to other fire detection and monitoring systems on board.

Minimax Minifog water mist system provides customised protection for engine rooms.

- The fine water spray system consumes very little water, which reduces collateral damage.
- Resources such as fresh water are preserved, and the quantities of extinguishing water which need to be carried are smaller.
- As it is a low-pressure system, it utilizes standard grade parts (fittings, piping, valves, etc.) offering cost saving benefits.
- The piping used in Minifog Watermist System is of a smaller bore piping than in conventional spray deluge systems, thus saving weight and cost.
- A low number of nozzles limits the amount of piping, reduces weight, and simplifies installation.
- Minifog water mist system is economical and quick to fit within existing set-ups – even while the ship is at sea. It is the ideal combination of safety and economy for ocean-going vessels.
- Approvals for many major marine classifications (e.g. DNVGL, LR, ABS, MED)



Photos

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Minimax Fire Solutions
International GmbH
Im Weddern 25
23858 Reinfeld
Germany
+49 4533 7884-0
marine@minimax.de

Editor:
Minimax GmbH
Industriestrasse 10/12
23840 Bad Oldesloe
Germany
+49 4531 803-0
www.minimax.com