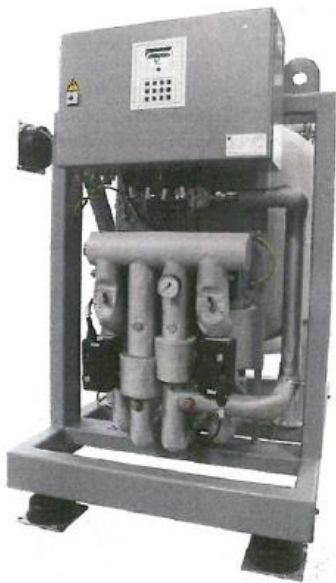


## Automation for more efficiency and safety

Noske-Kaeser is supplying the German Navy's latest frigates with automatic fire protection systems and a 3-in-1 chilled water management solution, for the first time specially customised for naval applications



The Chilled Water Management System as a shock and vibration-proof 3-in-1 solution for naval ships (left) and the Novec1230 fire extinguishing system (right)


The diversified tasks and operational conditions for modern naval forces also make new demands on the air conditioning, refrigeration and firefighting technology employed in naval ships. Ever longer downtimes in the theatre of operations, reduced crew numbers as well as the disparate, sometimes very harsh climatic conditions at various deployment locations around the world call for greater automation, safety, reliability, environmental protection and new service and maintenance concepts for these technologies.

For the German Navy's four newest F125-class frigates, Noske-Kaeser is supplying special custom-made firefighting systems as well as pressure maintenance systems for the chilled water system, which are very robust, low-maintenance, compact as well as user and environmentally-friendly, and are in part being used for the first time on German naval ships. The systems are fully automatic and have already proved successful in the offshore sector.

Following acceptance of the solutions for the »Baden-Württemberg« lead ship,

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we have now largely completed commissioning of the systems on the second frigate »Nordrhein-Westfalen« as well.

An innovation for the German Navy are the Novec1230 fire extinguishing systems for the protection of IT and equipment rooms, specially retrofitted by Noske-Kaeser for naval ships and made shock- and vibration-proof. Odourless and colourless Novec1230 gas has a strong extinguishing effect and, due to its high thermal conductivity, deprives the fire of heat within a flooding time of approximately ten seconds. It can thus put out the fire just as it starts to form.

Furthermore, with an ODP (Ozone Depleting Potential is expressed in a dimensionless number for comparison purposes only) of 0 and a GWP (Global Warming Potential is a number that compares the greenhouse effect of the substance to that of CO<sub>2</sub>, the GWP of CO<sub>2</sub> is 1.00.) of 1, Novec1230 is especially environmentally-friendly and is an approved clean agent.

**Schiffstechnik | Ship Technology**

It does not cause damage or leave any residues behind and is therefore particularly well-suited for the protection of rooms containing electronic and electrical equipment, the operation of which can for the most part be maintained without interruption. Since it is non-toxic and with a design concentration below the LOAEL (Lowest Observed Adverse Effect Level means the lowest concentration in ppm with minor effects such as irritations following a prolonged period of exposure to the substance) poses no risk to human health, Novec1230 is also a good choice for manned rooms. These fire extinguishing systems are compact and weight-reduced, requiring less space than CO<sub>2</sub> systems. In the event of a fire, they are activated automatically and can be remotely controlled.

Complete fire protection

Noske-Kaeser is also supplying custom

nance capacities on modern war ships require new concepts for maintaining chilled water pressure and quality. That is why Noske-Kaeser have specially retrofitted the chilled water management system already successfully employed on offshore facilities for naval ships, making it shock and vibration-proof. It operates completely automatically and reliably within the set parameters, is low-maintenance and comes in a redundant design. It can also be easily integrated into

the ship's Platform Management System. Noske-Kaeser not only provide hardware technology but also individually plan and implement all of the phases of the equipment, from design, engineering and manufacturing to installation, commissioning and comprehensive worldwide service.

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fire extinguishing systems for the other areas of the ship, assuming virtually all fire protection tasks on the F125 frigates. In addition to a sprinkler system for the prevention of major fires in crew quarters, each ship is also being equipped with the KiFEx kitchen fire extinguishing system specially developed for fire suppression in the galley of naval ships as well as a foam system including two shock-proof firefighting monitors which can be employed for both firefighting on the flight deck and as a non-lethal weapon. The company also providing tried and tested HyFEx systems from in-house production to protect the machine rooms as well as both helicopter hangars.

The equipment also includes CO<sub>2</sub> fire extinguishing systems for gas turbine and electric diesel engine enclosures, powder fire suppression systems in the helicopter hangars as well as ammunition sprinkler systems and a CBRN prewetting system.

In addition to fire extinguishing systems, Noske-Kaeser is also providing chilled water management on the F125-class frigates. Of note: While pressure maintenance in the chilled water systems of old war ships was provided by means of expansion tanks, the company is premiering on the latest German frigates a chilled water management system as a 3-in-1 solution, which in addition to pressure maintenance, automatically manages degassing and replenishment.

The increased demands for automation and operational safety of cooling water systems as well as lower mainte-



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