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Quick-Closing Valve Systems Now Available with Electric Release

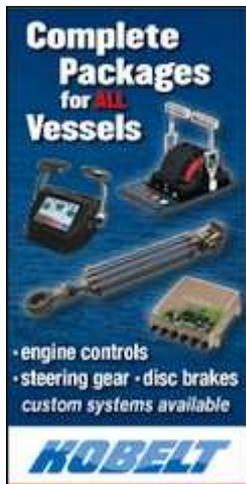


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Quick-closing valves and the corresponding control technology count among the essential safety equipment on board a vessel. According to SOLAS as well as all relevant international classification societies provisions, in case of an emergency e.g. fire in the engine room there has to be a possibility to rapidly and remotely interrupt all fuel supply into the place of fire. For this purpose, pneumatic, manually hydraulic and (for simpler arrangements) rope-pull systems have been widely accepted. The Hamburg-based company ARMATUREN WOLFF, German producer of quick-closing valve plants for several decades, now presents a technical innovation in this field. As a first manufacturer, we have developed a quick-closing valve system with electrical release. In this concept, the same general mechanical type of quick-closing valves is used as for conventional kinds of systems: The tappet of an actuator fixes the valve in open position against the force of a compressed spring. When released, the tappet is retracted and gives way for the fixing nut, in consequence of which the valve closes under spring force. Only the design of the actuator is different at electrically controlled valves from the regularly known conventional quick-closing valves. At electric systems, the valves are connected via a control cabinet, which guarantees an uninterrupted power-supply and allows



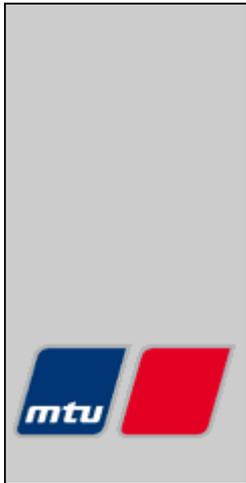


the remote control of the release action. Since such systems are designed for the absolute case of emergency, regardless of their control technology concept, a self-sustaining function has to be observed the system has to be fully operational even if no auxiliary energy on board is available at all. Equally, a short and maybe uncritical blackout or another single disturbance may never lead to an uncontrolled closure of the valves. According to the basic arrangement, the vessel power supply of 115 230 VAC is transformed to 24 VDC by means of a battery-buffered direct current supply module. On the secondary side, to power supply is distributed to a number of release switches with release indication light, which are each connected to one group of valves. When the switches are turned, the voltage change effectuates the release command at the valve actuators, thereby dropping the fixing device of the open valves; the valves close immediately. One special aspect of electric systems is the relatively simple integration of a comprehensive system supervision function. Consequently, all control lines are permanently controlled and monitored inside the control cabinet with a collective failure alarm module. In case a cable should be defective or a plug should not be fixed properly, a collective fault alarm is generated which can be signalled on-site as a general machinery alert as well as in the engine control room or on the bridge. On the display of the collective failure alarm module the precise defective line is indicated, allowing an efficient and straight forward repair. The central components of the control cabinet are supervised in the same way, which means a special advantage in comparison to conventional systems. By means of the numerous interfaces (incl. USB port) many possibilities are available for the uncomplicated integration into the global remote control and supervision system on board. In addition to the advantages of a room-saving installation in comparison to the pneumatic system concept, for instance, a main advantage for shipyards may be the overall efforts for installation and system start-up. Often there are more than 600 meters of control lines needed for a quick-closing valve system. It is an evident fact, that the installation and system start-up, incl. the identification

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of faulty connections and (in case of hydraulic systems) the deaeration, are clearly easier and less laborious for electric lines as for hydraulic or pneumatic control lines. After several development reiterations and an extensive process of assessment, the German Lloyd has already given its consent in the form of a type approval certificate for the application of this new kind of technology. Equally, the German flag authority, the Seamens Accident Prevention and Insurance Association (Seeberufsgenossenschaft), has expressed their consent. In addition, further acceptance by international classification societies is intended in short term.
www.armaturen-wolff.de



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