ARMATUREN WOLFF

Quick-Closing Valve Systems with Electric Release

Quick-closing valves and the corresponding control technology count among the essential safety equipment on board a vessel. According to SOLAS as well as classification societies' provisions, there has to be a possibility to rapidly and remotely interrupt all fuel supply in case of fire in the engine room. For this purpose, pneumatic, hydraulic and rope-pull arrangements 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, it has developed a quick-closing valve system with electrical release.

In this concept, the same general mechanical type of valves is used as for conventional kinds of systems: The actuator fixes the valve in open position against the force of a compressed spring. When released, its tappet is retracted and the valve closes under spring force. The only difference between electric and conventional quick-closing valves is the actuator.

The valves are connected via a control cabinet, which guarantees an uninterruptible power-supply and allows the remote release action. Since such systems are designed for the absolute case of emergency, the function has to be self-sustaining and fully operational even if no auxiliary energy is available. Equally, a short blackout 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, the power supply is distributed to a number of release switches, which are each connected to one group of valves. When the switches are turned, the valves close immediately.

One special aspect of electric systems is the relatively simple integration of a comprehensive system supervision function. All control lines, as well as all central components of the control cabinet, are permanently controlled with a collective failure alarm module. In case of a defective cable or if a plug should not be fixed properly, an alarm is generated which can be signalled on-site as well as in the engine control room or on the bridge. On the display the precise defective line is indicated, allowing an efficient and straightforward repair.

By means of the numerous interfaces 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 further advantage is the overall effort for installation and system start-up. Often there are more than 600 metres of control lines needed for a quick-closing valve system. It is quite obvious that the installation and system start-up, incl. the identification of faulty connections and (in case of hydraulic systems) the de-aeration, are clearly easier and less laborious for electric lines as for hydraulic or pneumatic control lines.

After an extensive process of assessment, the German Lloyd has 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 (BG Verkehr) has formally attested its application on board, and supplies have been certified by further classification societies on an individual basis.

The producer ARMATUREN-WOLFF is convinced that shipowners, shipyards and design offices will appreciate the advantages of this concept and increasingly move to this new technology. Ships are high-tech products, therefore the application of innovative products is essential.

More information and individual explanations about the quick-closing valve system with electrical release are available at the ARMATUREN-WOLFF booth at the SMM 2012 (hall A1.320). ❖

Armaturen Wolff
Tel: +49-40-532 873-0 • Fax: +49-40-532 873-29
aw@armaturen-wolff.de
www.armaturen-wolff.de