



Components from Wago are used on board the offshore supply vessel *Stril Barents*

Reliable, easy-to-handle automation components for hydraulic systems

WAGO A provider of electrical connection and automation technology, Wago has developed a new module that enables the control of hydraulic valves directly from the control system. The module works together with the other interface modules for the PLC from Wago, allowing the highest level of control.

As oil and gas companies move farther north into the fragile environment of the Nordic Sea, the requirements for efficient oil skimmers used in harsh weather conditions including low temperatures are increasing. In case of an oil spill, fast launching and reliable handling of the skimmers are critical.

MIFO, a Norwegian technology supplier for the ship industry based in Molde, has developed a complete control package for handling hatches on utility vessels for oil skimmers. The new system was installed at the customer site of Aukra Maritime, a Norwegian supplier of maritime handling equipment. The oil skimmers are launched through a large, hydraulically controlled gate on the side of a vessel. During collection of the oil, a large amount of hydrocarbon

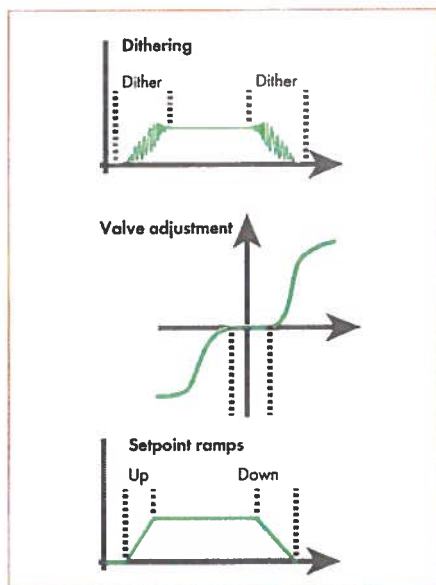


Illustration of the technology Source: Wago

gases builds up, creating an explosive atmosphere. After the work is done, the skimmers are pulled back into the ship.

A Wago 750-881 controller is used to manage the hydraulic system as well as monitor the environment in this highly explosive atmosphere. Wago's interface has been enhanced for use in explosive atmospheres by integrating intrinsic safety in the IO cards, thus enabling direct wiring from the PLC (programmable logic controller), placed in a relatively safe area (Zone 2), directly out into a potentially highly explosive atmosphere (Zones 0 and 1) without the traditional extra Zener barriers cabinet. Space is always a limiting factor, even on large vessels. In order to get a compact module, MIFO has also utilised the



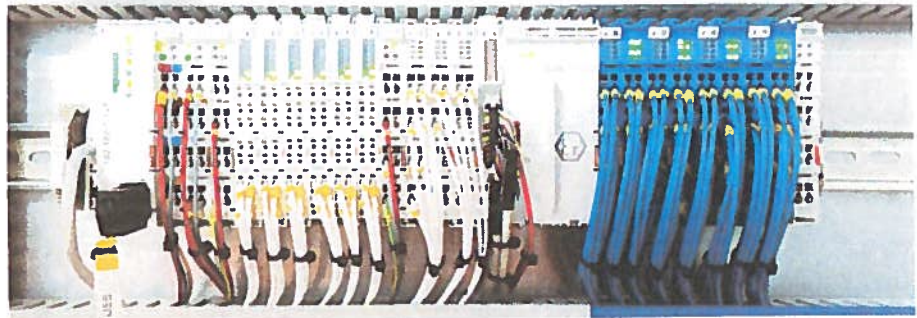
> ABOUT WAGO

Wago Kontakttechnik GmbH & Co. KG, a family-owned company headquartered in Minden, is a world market leader in spring clamp technology and ranks among the leading suppliers of connection and automation technology. Its products are used worldwide in industry, vehicle construction, building services and many more demanding applications. www.wago.com

16-channel IO cards from Wago, enabling 16 DI/O channels per 12mm.

The hydraulic card used by MIFO can either control two hydraulic valves with a single coil, allowing unipolar or bipolar operation, or, in a mode with one valve, two coils with unipolar operation. In an explosive environment such as described here, the maximum power output is 1.6 A, while in a non-explosion-risk area a full 2.0 A is possible, allowing most hydraulic valves on the market to be directly interfaced to the control system. The card has all the required technology function, enabling smooth and fast movement of doors weighing several tonnes, including adjustable dither, ramp functions, gain compensation, etc. According to the manufacturer, the control accuracy exceeds 0.4%. Both three- and four-wire valves may be controlled. The MIFO application has six valve control cards in the same rack.

To prevent ignition of explosive gases on board ships, different types of protection are used, such as flameproof enclosures and encapsulations. Alternatively, Zener barriers are used to separate hazardous from safe areas. As the Zener barriers earth the excess energy, there is a strict regime associated with earth-fault detection and a single earth fault may require a shutdown of the systems. The use of barriers based on galvanic isolation in connection with a power limitation (current and voltage) has made this much easier. Wago's IO cards also feature a compact design. The control engineer works with the signals in the same way as any other signal, and the extra cabinet for barriers is omitted. The Ex i modules are directly connected to the field cable going out to the explosive area. Furthermore, the Ex i signals and Zone 2 signals are on the same rail; separation is done with the Ex i power module, ensuring both the



WAGO's 750 Series I/O-System includes both standard and Ex modules. The proportional valve module controls valves up to Zone 2

power limitation as well as the required creeping distance of 50mm between intrinsically safe and non-intrinsically safe

modules. The controller with its interface cards is approved for Zone 2 installation, according to ATEX and IECEx.



JUGGLING WITH TWO SERVICE PROVIDERS?

YOU DON'T HAVE TO!

Let us save your time and money.

We provide both HVAC and fire protection for offshore substations from one proven source.



HVAC



FIRE FIGHTING



Contact us now:
+49 (0)40 85 44 0 • info@noske-kaeser.com • www.noske-kaeser.com

Foto: Siemens