RELIABLE FLOW MEASUREMENTS ON OFFSHORE CONVERTER PLATFORMS IN THE NORTH SEA

MEASUREMENT TASK

Offshore work areas are characterised by limited space and rough environmental conditions. Tough on the people who work there and tough on the equipment – including the measuring systems. Stringent rules and regulations govern the measurment equipment that fulfil the demanding measuring tasks. This is where the proven, non-invasive ultrasonic flow measurement technology with its clamp-on sensors comes into play and allows the user to obtain concrete information on flow velocity, volume flow or thermal energy quickly and reliably at different measurement locations without costly process interruptions and interventions in the process system.

SOLUTION

For TenneT TSO GmbH, a transmission system operator with a grid connection obligation for offshore wind farms, a portable flow measurement system with precisely these characteristics proved to be a suitable measuring instrument. TenneT's aim was to find a portable ultrasonic flowmeter that met all the criteria in terms of compactness, robustness and intuitive operation. Due to these requirements for a non-invasive measurement system, other measuring methods were not considered. The flowmeter was installed on the offshore converter platforms HelWin alpha and beta as well as SylWin alpha in the eastern North Sea.

After detailed customer consultation, a test run with a portable KATflow 200 ultrasonic flowmeter was agreed and carried out. In addition to very good measurement results, the simple operability of the hand-held device and in particular the *Audible Sensor Positioning Assistant*, an operating aid for exact sensor positioning, was emphasised. Today, two KATflow 200 flowmeters are mainly used to control pumps, measuring sensors and various control valves. The flowmeters are also used to regularly check the water extinguishing system of the helideck. Thus, possible faults in the system can be quickly identified and the proper operation of the entire system ensured. The KATflow 200 mainly measures salt water, fresh water and water-glycol mixtures in different concentrations in pipe diameters ranging from DN 25 mm to 450 mm. Over the years, ultrasonic-based flow measurement technology has become an integral part of the toolbox of many engineers and technicians due to its versatility and is proving its far-reaching advantages in an ever-expanding variety of process industries.

ADVANTAGES

- Continuous monitoring of pumps and control valves
- Random inspection of the helideck water extinguishing system
- Spontaneous, instant fault analysis thanks to portable clamp-on technology
- Intuitive operation and easy installation of the flow measurement system
- Measurement in hard-to-reach places thanks to handy instrument technology
- *Audible Sensor Positioning Assistant* for accurate transducer installation

SPECIFICATIONS

Installation type	Portable
Medium	Water-glycol mix, Fresh and salt water
Pipe material	Steel
Pipe diameter	25 to 450 mm
Temperature	Normal range (up to +20 °C)
Flow rate	Varies
Special requirements	Flowmeter manageability in confined spaces

APPLICATION

Tennet's converter offshore platforms in the North Sea.

INSTRUMENT SOLUTION

Measurement setup of a portable KATflow 200 on offshore converter platform Helwin alpha.

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