

Process Instrumentation

Ahoy! On the high seas with Siemens transmitters

TGE Marine uses the SITRANS P DS III series for the transport of cryogenic liquid gases in their ships.



Cast off and full speed ahead! Four ships designed by the TGE Marine company leave the ports – with pressure and differential pressure transmitters from the Siemens SITRANS P DS III series on board. The digital pressure transmitters are used to measure gauge pressure, absolute pressure and differential pressure. This is what the near future looks like. In just a few weeks, the transmitters will be installed and will travel thousands of kilometers over the world's seas.

The customer

The company TGE Marine Gas Engineering is one of the leading specialist suppliers of engineering services for plants used to store and transport liquid gases, as well as plants for fuel supply based on liquefied natural gas (LNG) for marine drives. The gas systems with which the company has equipped more than 150 gas tankers were built in over 20 different shipyards in Asia (China, South Korea and Japan), Europe and South America.

The company has its headquarters in Bonn, Germany, which is considered one of the greatest regions of expertise in the field of technology, particularly with respect to design and engineering. The branch in Shanghai, China, provides support in the areas of marketing, construction supervision and project management.

The challenge

Very high requirements are placed on the devices under difficult conditions on high, harsh seas. They need to withstand these conditions and reliably transmit the process pressures to the control system. TGE Marine Gas Engineering decided to use the Siemens Transmitter series because these transmitters have a type approval from the marine classification society and thus verifiably meet the high demands (salty air, flooding, extreme acceleration). In this context, it is of key importance that the devices have a rugged design. A further challenge is that the de-

The SITRANS P DS III series is used in gas carriers that are currently being built in the Jjiangnan Shipyards in China.



VICES need to perform measurements in hazardous areas.

“The Siemens SITRANS P DS III has an Ex approval, high degree of IP protection, the precision that we require, a rugged enclosure, can communicate via HART and can be configured externally, which is very important for us because we work in hazardous environments. In a nutshell, the device meets all of our requirements and that is why we chose SITRANS P DS III”, explains Karl-Heinz Arzdorf, Lead Technical Engineer Electrical and Instrumentation at TGE Marine.

The solution

In the near future, the SITRANS P DS III series will be used in the TGE Marine Gas Engineering ships for remote monitoring of the cargo system, which is currently being built in China. These ships are used for the transport of cryogenic liquid gases LNG (-163°C) and LEG (-103.8°C) throughout the world.

There are two methods of transporting gas: In addition to the transport of gas through pipelines, gas can also be liquefied and transported as liquid gas using ships. The advantage of this is the reduced volume. Liquid gas is used as a low-emission fuel in many power stations (LNG) or as raw material for plastic (LEG).

The measuring task of the pressure sensors is to transmit the operating pressures of the process plant and the cargo tanks as intrinsically safe 4 to 20 mA signals so that the plant can be controlled and monitored securely from the cargo office by the crew. An additional advantage of the Siemens pressure sensors is that they allow control via HART protocol. This means that service or maintenance work on the transmitter can be carried out from the cargo office via a PC with the appropriate software, and does not have to be performed on location in the hazardous zone.

The SITRANS P DS III series is used in several processes within the tanker: for tanker monitoring, in the tank itself, in re-liquefaction plants and in the monitoring of other liquid gas processes.

Karl-Heinz Arzdorf, Lead Technical Engineer Electrical and Instrumentation, is confident about the future: “Siemens is already our main supplier in the field of automation technology, so we are very familiar with Siemens. In the last number of years, Siemens has also made great progress in the area of field instrumentation and now offers the entire range of technology. This is why we decided to also use field instrumentation such as the SITRANS P DS III in the equipment and design of our ships”. On that note: Off to new shores!



Get to know
our team of
pressure
experts!



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