Purge and Pressurization for Marine Environments

Certified Hazardous Area Solution with Reliable Communication

At a Glance

- Certified vor hazardous area operation
- Emergency shutdown (ESD) capability
- IP66 degree of protection
- Fully automatic operation without operator interface
- Connect and Track technology for reliable communication

Your automation, our passion.

PEPPERL+FUCHS

The Application

A marine customer required a purge and pressurization solution for their DVM ExP2 equipment that would be mounted on ships. The application not only had to meet marine requirements. It also had to cope with an extended temperature range of -20 °C to 60 °C, and had to come with certification for ATEX/IECEx Zone 1 or 21, Ex pxb.

The Goal

The communication system had to be designed for Zone 1 operating specifications. It also had to guarantee secure, high-bandwidth, low-latency data communications and a stabilized microwave link between vessels and ashore, even in constantly changing sea states and potentially harsh environmental conditions. Another requirement was the configuration of the system for emergency shutdown (ESD) and the abiity to provide up to 6 hours of extended communications, despite the loss of GPS. IP66 degree of protection was required because the control unit needed to be mounted on the outside of the enclosure.

The Solution

The 6000 Series purge system seemed ideally suited for this task, as we had already used it for several marine applications where the customer had received DNV marine certification for their equipment. Therefore, we knew we could meet the marine standard for control room requirements.

The system is also certified for hazardous gases and dust. Although the combined certification for dust and gas is not defined in IEC60079, the use of the 6000 Series in both environments has previously been accepted by the certification body. Besides IP66 degree of protection, the control unit is able to operate fully automatic without the need of any operator interface.

Due to innovative Connect and Track technology, a reliable and high capacity microwave link can be maintained even with the continual movement of one or both end points. The system is configured for ESD (emergency shutdown) communication and has been tested to provide up to 6 hours of extended communication, despite the loss of GPS.

The Benefits

Pepperl+Fuchs is a global company. We were the only competitor providing purge and pressurization systems with offices all over the world. This is an important factor with ships sailing all over the world.

Zone 1 installation requirement precluded other possible types of protection. The 6000 Series purge and pressurization system proved to be the only suitable method to achieve this in a fast and cost-effective way, while meeting all requirements of the application. In addition to the fully automated 6000 Series system, we were able to provide the customer with Zone 1 rated stainless steel field junction boxes and cable glands. They also required galvanic switch isolators for push buttons on the outside of the enclosure, which we were able to provide.

There was a learning curve for the customer because it was the first time they had to manage the certification process for hazardous areas. We provided on-site training and helped them design and certify their equipment. Providing sample units was a requirement because the certification process takes a long time. The company needed samples quickly for submission to DNV (Det Norske Veritas), and we were able to fulfill this requirement. Finally, we were able to offer the system at a much lower cost than competitors.