

Battery charging systems

Working in partnership with a leading EPC to develop certified battery charging panels for a fire pump system

Background

Firefighting systems for oil & gas facilities and other large-scale plants generally rely on high pressure water supply delivered by dedicated fire water pumps. These pumps are typically diesel driven so that they are independent of the main electrical power, and the starter batteries for these motors must be kept fully charged and ready. As expected, battery charging systems for use in hazardous areas require appropriate certification - while the control systems can be protected by relatively simple means such as purge & pressurization (Ex p), batteries must be considered separately as they may give off gases during charging.

Project Brief

As part of a wider project, the EPC was installing a containerised generator set that would be used to power fire pumps on an offshore platform in the Caspian region. All of the equipment within the container was required to be certified for ATEX Zone 2, including the charging panels for the motor starter batteries. Limited space inside the container, along with associated thermal issues added to the complexity of the project.



Challenges

Limited space inside the container meant that the charging system enclosures were smaller than ideal, leading to a high density of internal equipment. Expo's ATEX populated umbrella certificate includes density limitations, hence was not suitable in this case.

Thermal management: the interior of the container would be maintained at a continuous ambient temperature of 45°C

Local panel population was required in Baku, Azerbaijan in order to avoid high export/re-import tariffs on the internal components required. At the same time though, no local notified bodies were able to carry out testing/issue certificates against the relevant ATEX EX p standard EN IEC 60079-2.

Outcome

Knowing Expo's competence and reputation within the industry for hazardous area consultancy and certification, the end user accepted a manufacturers EC declaration for the populated enclosures for ATEX Zone 2.

Expo's engineers worked with the customer to design a safe, functional layout for the internal equipment within the limited space.

A vortex cooler providing 300w of cooling was specified and installed in each enclosure to keep internal components within their safe operating parameters.

Expo Products and Services

Type Z Purge

IECEx, ATEX & UL certified purge and pressurization systems for Zone 2, Class I Div 2 applications



Features

- Global approvals
- Purge flow capacity up to 900 NI/min
- Leakage Compensation or Continuous Flow
- Stainless steel enclosure construction

Expo's Minipurge type Z range provides a full purge and pressurization solution for electrical enclosures and other equipment installed in Zone 2 or Class I Div 2 hazardous environments. Physically the same, Y purge systems are for use in Zone 1 / Class I Div 1 hazardous environments where the equipment to be protected already carries Zone 2 or Class I Div 2 certification.

[Click here](#) for more information.

Fast-Track Standard Enclosure Service



Using standardised building blocks and automated configuration and design tools, Expo's Fast-Track service can deliver you tailor-made enclosures within weeks.

Expo manufactures the enclosure to your specifications and delivers to you component certified. If this is an Ex p enclosure, then the purge system will already be installed and tested. The enclosure can then be populated at your facility.

[Click here](#) for more information.