Pumping Iron

Working in partnership with a leading fire pump control manufacturer to develop a Zone 2 certified solution from an existing safe area system.

Project Brief

Over many years, this company has come to Expo for one-off hazardous area solutions. However, having developed a new range of safe area systems, it was decided to create a parallel solution for hazardous area use that would become a new standard unit. While some systems in the past had used Ex nR as the protection concept, for this project, Ex p was by far the best solution.

Challenges

Thermal management - while the safe area system comprised one large enclosure containing both high voltage switchgear and control systems, the hazardous area system would need to be split into two separate enclosures to better manage heat loads.

Components - the internal design and components needed to stay as close as possible to the original safe area solution.

Ease of use - the customer required a user-friendly system including minimal operator interactions and maintenance

Outcome

Expo As the project developed, what started as a straightforward conversion rapidly changed into a fully bespoke build of two - HV and control - panels, that would be joined as one unit when in use. The HV cell switchgear was heavy and bulky, so Expo's design team needed to give additional consideration to mounting points and supporting metalwork, while maintaining ease of access for installation and maintenance.

In relation to the control panel, this section required an 8000BTU/hr (2.3kW) hazardous area certified air conditioning (AC) unit to be integrated to the rear of the enclosure with cold air being directed up and over the chassis plate. This enclosure was designed in conjunction with Iceqube, a US based cooling system manufacturer, who both recommended the best system and give guidance on how best to install.

In addition, the customer required a certified Allen Bradley HMI to the front of the enclosure. However, this came with special conditions requiring mechanical and UV protection when not in use. We designed and produced a non-pressurised door allowing operators to easily access the panel.

Finally, both units were finished in 'Cardinal Red'

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Expo Products and Services

MiniPurge Type X

IECEx, ATEX & UL certified purge and pressurization systems for Zone 1, Class I Div 1 applications

Features

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

Expo's MiniPurge type X range provides a full purge and pressurization solution for electrical enclosures and other equipment installed in Zone 1 or Class I Div 1 hazardous environments. With a range of flow capacities up to 900 Nl/min, the systems are suitable for large enclosures up to 5.4m³ volume.

Click here for more information.

Custom Enclosure Service

With Expo's fully custom process, a dedicated engineer will work with you to develop exactly what you need and agree on a detailed budget and project timeline with milestones. As this is a highly flexible service, we can adapt the plan if your project requirements change.

Click here for more information.

Certification consultancy

Our Certification Engineer works with the customer through a standard, well-proven process to make sure the design is compliant with the Expo's Schedule of Limitations (SoL), ensuring successful project completion. The SoL defines the scope of what can be certified under Expo's populated enclosure certificate and is broad enough to cover most applications.

Click here for more information.

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