Case Study

Developing a hazardous area solution for particle measurement systems

Working with one of the leading global manufacturers of precision instruments for use in laboratories and manufacturing applications

Background

The client had developed a new instrument for real-time analysis of particles in pharma- & biotech-based manufacturing processes and came to Expo to develop a version that could be deployed in hazardous areas.

Project Brief

Re-package the existing safe area particle measuring system suitable for use in Class I, Division 1 & Zone 1 hazardous areas, while staying close to the original footprint.

Challenges

- The resulting enclosure, suitable for use with a purge and pressurization, needed to maintain the original footprint and form factor as much as possible
- The system would need to include the means to isolate and control power to the device in order to comply with the various codes & standards.
- The enclosure internals would need to be easily accessed for adjustments and maintenance.
- The solution required apparatus certification for use in various markets around the world.

Outcome

- Working with the client's engineers, Expo designed a new instrument enclosure that was suitable for pressurisation, while allowing access to the internal components.
- A custom X purge system and relief valve were integrated into the enclosure alongside the existing instrument components, giving a sleek single-box solution.
- The completed system was successfully certified for Class I, Division 1 and ATEX & IECEx Zone 1 areas, permitting the client to access multiple markets worldwide.

Expo Technologies Ltd.
Unit 2, The Summit,
Hanworth Road,
Sunbury on Thames,
TW16 5DB, UK.
T:+44 (0) 208 398 8011
E: sales@expoworldwide.com

Expo Technologies Inc.
9140 Ravenna Road, Unit #3,
Twinsburg,
OH 44087,
USA
T: +1 (440) 247 5314
E: sales.na@expoworldwide.com

Qingdao Expo M&E Technologies Co. Ltd.
329 Huashan Er Lu,
Jimo City, Qingdao,
266200 China
T: (86) 532 8906 9858
E: qingdao@expoworldwide.com

Expo Products and Services

Custom Enclosure Service

Some projects call for special shapes and sizes of enclosures, non-standard features, or very special applications, and may also require input from a Notified Body during the design phase or final certification.

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.

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.

The Minipurge systems provide an ideal platform for customisation and re-packaging to suit specific customer applications, while still retaining their global certification.

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MiniPurge interface unit (MIU)

IECEx, ATEX & INMETRO Ex d certified solutions for enclosure power and signal isolation.

Features

- Global Ex d approvals
- Isolates low power signals and up to 32 A power
- Compatible with MiniPurge & SmartPurge II
- Aluminium construction

Expo's Interface Units provide switching of power and signals to the pressurized enclosure, using a control signal from the purge system. This capability is required for enclosures installed in Zone 1/21 or Class I/II Div 1 hazardous locations.

Click here for more information.

Design & Consultancy Services

Expo Technologies' team of consultants and certification engineers have the experience and knowledge to support our customers through the certification process for equipment to be used in Hazardous Areas.
From concept design through to maintenance, Expo Technologies works with you to reduce the risks and accelerate your entry into global markets.
Click here for more information.

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