

Specialist surface finishing systems

Working with a manufacturer of automated industrial surface preparation systems develop a hazardous area solution

Overview & Project Brief

The client manufactures a range of robotic surface preparation systems that are used to prepare large surfaces prior to the application of special paint and coatings. Due to the requirements of a particular end-user, they needed to develop a hazardous area solution for use in a Class I Division 1 (CID1) environment.



Challenges

- The standard systems were not originally designed with hazardous area duty in mind.
- Each system comprised a robot arm, with 10 camera and control enclosures in varying sizes, each requiring explosion protection.
- To meet code requirements for CID1, the solution would need to include the means to isolate and control power to the system.
- The project needed to be completed in a very short amount of time.

Solution

- While it may have been feasible to apply other protection methods to some elements, purge & pressurization was recognised as the only practical solution for the entire system.
- Expo has extensive experience in developing purged & pressurized solutions for similar robotic applications, where a series purged approach is the best solution.
- A minipurge system configured to provide a suitable flow rate across all 10 camera and control enclosures in series – this requires specialist knowledge to ensure sufficient flow at the final enclosure outlet, while not over – pressurizing enclosures at the beginning of the “chain”
- A customised interface unit was integrated with each system to provide electrical power isolation, as required by the applicable standard, NFPA496.

Expo Products and Services

MiniPurge type X with continuous flow



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 NI/min
- Leakage Compensation or Continuous Flow
- Stainless steel enclosure construction

[Click here](#) for more information.

Customised Minipurge interface Unit

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



[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.

