

## Paint spraying robot arm

**Helping a robotic systems manufacturer develop a purged & pressurized solution for automotive paint robot arms**



### Background

Robotic arms are widely used in industries such as automotive manufacturing, not only for assembly and welding, but to deliver consistent, high quality paint finishes. With many of the paints being solvent based, the painting areas may be classified as hazardous areas, requiring the electronics within the robot arms to be protected by a suitably approved method. Due to the complexity of a typical robot arm, protection by purge and pressurization (Ex p) is generally considered to be the best solution.

### Project Brief

This global industrial robot manufacturer had initially developed their own purge and pressurization system for flammable painting applications, but their solution was only suitable for one particular geography. To access the global market, they needed a new solution with wider certification and which would meet their specific configuration requirements. Expo were seen as the most experienced company in this area.

### Challenges

Although the Expo SmartPurge II was identified as the most suitable system, in its standard configuration the air outlet valve and relief valve would be venting into the safe area, something the client wished to avoid.

A standalone outlet/relief valve was required that could be remotely mounted within the painting area, keeping the control room (safe area) clear of vented air.

The client also wished to incorporate status information from the purge system into their control station.

### Outcome

Working jointly with the client, Expo engineers developed a remote outlet/relief valve that could be mounted up to 15 metres (48ft) away from the SmartPurge II.

The SmartPurge itself was a hybrid of the standard enclosure purge (SP2-PM) & motor fan versions (SP2-FM) to permit connection to the remote valve, while retaining standard pressure sensors.

Software modifications were made to give the client access to RS485 and ethernet outputs.

## Expo Products and Services

### SmartPurge II

IECEx, ATEX & FM certified intelligent purge & pressurization system



#### Features

- Global approvals
- Purge flow capacity up to 540 NI/min
- Can be configured as Type X, Y or Z purge
- Leakage Compensation or Continuous Flow
- Stainless steel enclosure construction

The SmartPurge II (SP2) is a highly flexible electronic purge and pressurization system suitable for a wide range of flow rates and duties. It can operate as either X, Y or Z purge, and in leakage compensation (LC) or continuous flow (CF) modes.

[Click here](#) for more information.

### Design and 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.

