

# HAZARDOUS AREA ENGINEERING AND EXPERTISE - WORLDWIDE



Expo Technologies applies more than 30 years experience to provide solutions for a customer base spanning major end users. OEMs and process industries. Expo enables operating electrical equipment and instrumentation in hazardous locations, harsh environments, hygienic conditions and other challenging applications.



PHARMACEUTICAL MANUFACTURE



OIL & GAS PRODUCTION



CHEMICAL PROCESSES



PETROLEUM INDUSTRY



REFINERIES & TERMINALS



PAINT USER & MANUFACTURE



ORIGINAL EQUIPMENT MANUFACTURER

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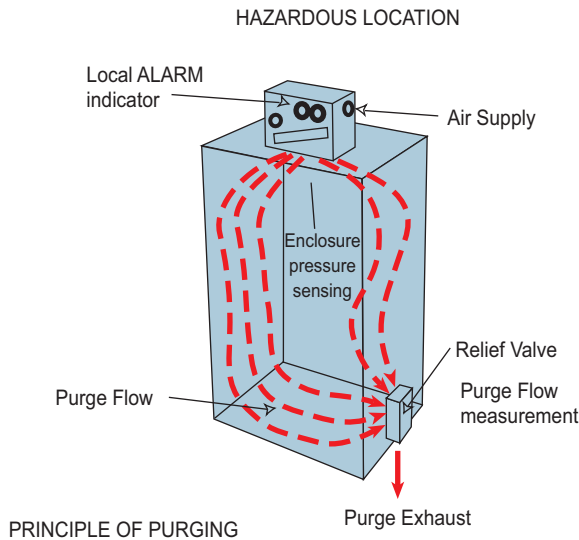
**ATEX**

**ISO 9001**



## Expo Purge & Pressurizing

Expo Technologies provides solutions for electrical equipment in Hazardous locations. Purge & Pressurizing Control Systems allow general-purpose electrical apparatus to be located safely in a Hazardous Location. A Hazardous Location is where there is a presence of ignitable gases, liquids or dusts and has been classified as hazardous/explosive. Hazardous Locations are defined in International IEC Standards, European Standards (Zone 0, 1 & 2) and in the USA, NEC Standards, (where Division 1 & 2 are mainly used).



## PRESSURIZATION CONTROL SYSTEMS

- + X Y Z Purge systems. The X Purge is also European and Australian approved.
- + Approvals - FM & cULus, European, Australian, with one system.
- + A complete range of systems is available to suit the smallest enclosure to  $>100\text{m}^3$  (3500 ft<sup>3</sup>).
- + Applications - General - purpose enclosures, electrical panels, analyzers, computers, HV motors, etc.



Pressurization Control Systems

## OPTIONS

### Expo Technologies Pressurized Enclosures:

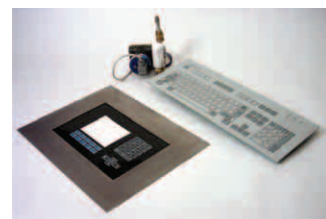
- + Certified to the European Standards to include general-purpose electrical apparatus.
- + Alternatively a range of NEMA 4 and 4X and IP rated pressurized enclosures to meet other national standards.
- + All Pressurized Enclosures are subject to an over-pressure / leakage test to give long term reliability.
- + Stainless steel and Carbon (Mild) steel.



Pressurized Enclosure

## ENCLOSURE ACCESSORIES

- + Keyboards, Keypads, Pointing Devices.
- + PLC Operator Interface Adapters.
- + Enclosure Cooler Systems.
- + Power isolation / disconnect and remote alarm units (MIU's).
- + Push Buttons, Lamps and Switches etc.



Pressurized Enclosure Accessories

## PRESSURIZED ROOMS

- + Purge and Pressurize Control Systems fitted to Room and Analyzer Houses for people to work within.
- + There are several standards that cover this type of installation. Expo Technologies control systems are designed to fulfil these requirements.

## Intrinsic Safety (I.S.)

Intrinsic Safety is an internationally recognised means of protection for electrical apparatus in Hazardous Locations. The principle is to reduce the electrical energy to a level insufficient to cause ignition of the explosive gas. An intrinsically safe protection device, barrier, isolator must be included in the I.S. circuit/loop and can reduce the installation and wiring costs for the operator.

### SOLENOID VALVES

- + Low power solenoids are ideal for I.S. (Intrinsically Safe) circuits.
- + High reliability due to the Friction Free (FFV) design.
- + Eliminates problems of sticking and wear associated with traditional spool valves.
- + FFV (Friction Free Valve) Approvals - North America, Europe and Australia.



I.S. Solenoid Valves FFVs

### KEYBOARDS AND DATA TERMINALS

- + Certified in Europe.
- + Full function keyboards for a wide range of applications.
- + Force Sensitive Mouse option.
- + Rugged design.
- + Industrial Standard interfaces.
- + The Datex Terminal can include LCD Text Display to input data in a Hazardous Location.



Datex I.S. Keyboard and interface

## Hazardous Area Enclosures

Flameproof (Explosion-proof) prevents an internal explosion propagating to the external atmosphere. An internal explosion can escape from the enclosure via flanges or threads that 'cool' the explosive gases before they enter the hazardous area, thus preventing an external explosion. Generally used for small switch-gear and instrumentation.

### FLAMEPROOF BOXES

- + Certified in Europe.
- + Available in Aluminium, Cast Iron, Phosphor Bronze and Stainless Steel.
- + Accessories include windows, push buttons, switches, rotary switches etc.
- + Certification allows a wide variety of electrical equipment to be installed.



Flameproof Box range

### RESTRICTED BREATHING Ex nR

- + For zone 2 Areas to ATEX or IEC for Gas of Dust hazards
- + Passive protection manufactured from Stainless steel
- + Can house sparking contacts
- + Unlimited size and custom designs
- + Can incorporate windows, push buttons and other operators



Restricted Breathing EEx nR Enclosure

### NON INCENDIVE EQUIPMENT Ex nA

- + For zone 2 Areas to ATEX or IEC for Gas of Dust hazards
- + Assessment of contents to ensure no sparking or high temperature incendive hazards
- + Modification of contents to meet requirements for temperature rise, creepage and clearance

### cGMP ENCLOSURES FOR PHARMA AND FOOD MANUFACTURING

- + Stainless steel construction
- + Crevice free or minimised construction
- + Food safe seals suitable for chemical cleaning regimes
- + Custom designs including thermal management



NIR Spectrometer

# Expo Technologies Support

Expo Technologies has an experienced workforce that is trained in the techniques of hazardous area electrical protection. This support is available from offices in England, United States and a network of Representatives / Distributors throughout the world.

## SERVICE SUPPORT

- + Expo Technologies has service personnel to support the products and solutions supplied. Annual Service Contracts are available to meet the requirement of client-planned maintenance and ISO 9001 quality programmes.
- + The Service Engineers are certified for Offshore installations working.

## UNLOCK THE SECRETS OF EXPLOSION-PROOF APPROVALS

- + Expo Technologies Consultancy provides specialised consultation for those clients who are seeking hazardous location approval / certification.
- + Consultancy includes advice on the design, preparation of submission document and supervising the testing, through to final Approval / Certification.
- + This service will enable the client to bring their product to the market place quickly and efficiently. expertise covers North American, European and International standards as well as requirements for ATEX and CE marking for the European market.
- + For existing installations or a special design that has not been approved / certified, Expo-Technologies can produce a 'Third Party Report' (TPR), ATEX European Declaration (AED) or 'Manufacturers Declaration of Conformity' (MDoC) after inspection of the equipment. This checking by an independent organisation with specific industry expertise can be a very cost-effective way to demonstrate compliance, either to the end user or appropriate authorities.

## TRAINING COURSES

- + Training courses on the standards, application, servicing and maintenance of electrical apparatus in hazardous areas can be tailored to the client's specific requirements.



Expo Technologies main engineering and manufacturing facility



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