What's new from Expo - Autumn 2020

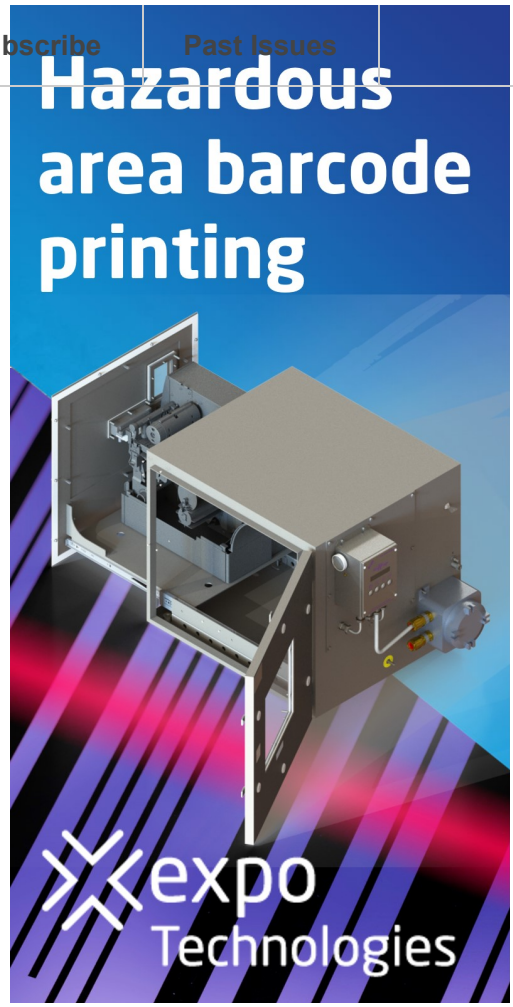
Welcome to this update from Expo Technologies - your hazardous area partner

COVID-19 Update

As the UK and much of Europe is once again facing new restrictions, we would like to assure all our customers that Expo continues to operate throughout this difficult time. We continue to take all necessary steps to keep the business secure and our people safe, so we do not anticipate any disruption to our normal operations. Stay safe everybody.

Featured Product: Hazardous area barcode label printing

Printers for bar code and batch number labels are found in most manufacturing facilities. If the printer is to be located in a hazardous area, for instance within a pharmaceutical production line, then a certified solution is required to ensure safe operation.

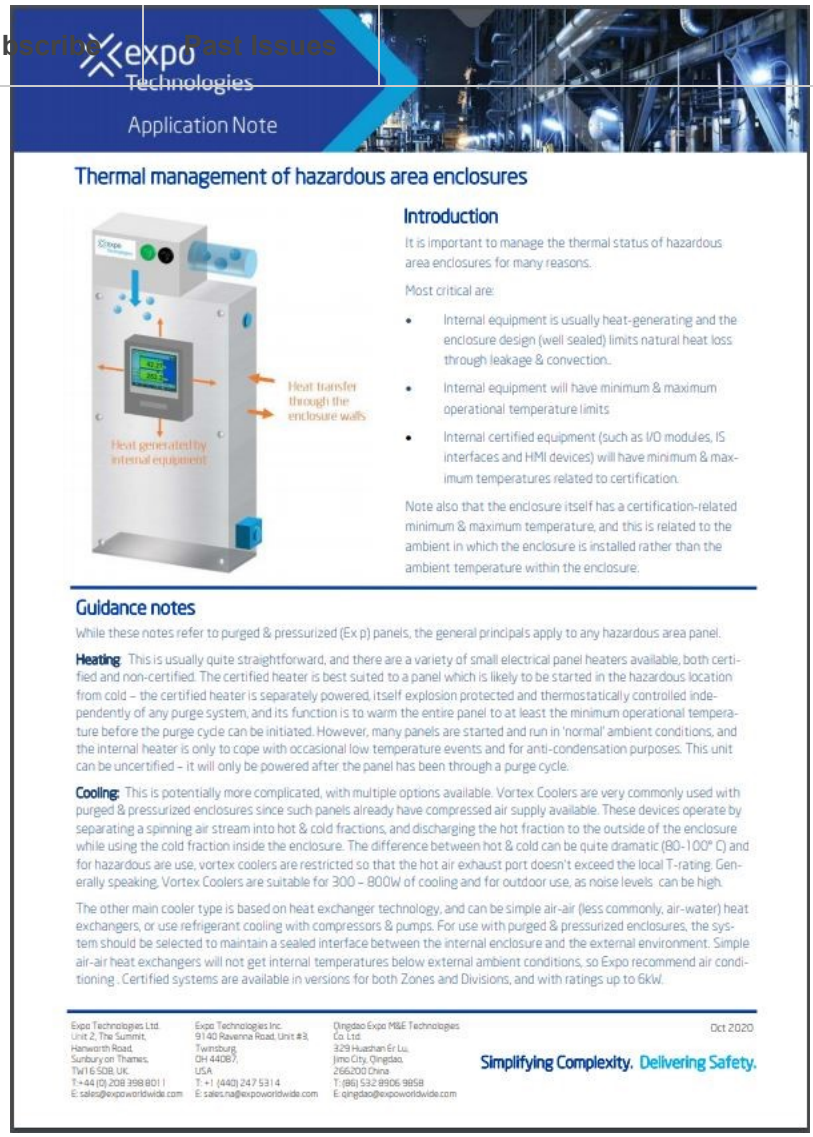


Expo has worked with Zebra Technologies, a leading manufacturer of industrial label printers, to develop a standard IECEx and ATEX certified solution based around their popular ZT400 series, including both 4" and 6" print widths. Find out more.

Featured Application : Thermal management of hazardous area enclosures

Thermal management of hazardous area enclosures is important to consider at the start of any project.
Leaving it an an afterthought can easily drive up the project costs and cause unwanted delays.

Read Expo's latest application note to find out more.



Technologies

Application Note

Thermal management of hazardous area enclosures

Introduction

It is important to manage the thermal status of hazardous area enclosures for many reasons.

Most critical are:

- Internal equipment is usually heat-generating and the enclosure design (well sealed) limits natural heat loss through leakage & convection..
- Internal equipment will have minimum & maximum operational temperature limits
- Internal certified equipment (such as I/O modules, IS interfaces and HMI devices) will have minimum & maximum temperatures related to certification.

Note also that the enclosure itself has a certification-related minimum & maximum temperature, and this is related to the ambient in which the enclosure is installed rather than the ambient temperature within the enclosure.

Guidance notes

While these notes refer to purged & pressurized (Ex p) panels, the general principals apply to any hazardous area panel.

Heating: This is usually quite straightforward, and there are a variety of small electrical panel heaters available, both certified and non-certified. The certified heater is best suited to a panel which is likely to be started in the hazardous location from cold – the certified heater is separately powered, itself explosion protected and thermostatically controlled independently of any purge system, and its function is to warm the entire panel to at least the minimum operational temperature before the purge cycle can be initiated. However, many panels are started and run in 'normal' ambient conditions, and the internal heater is only to cope with occasional low temperature events and for anti-condensation purposes. This unit can be uncertified – it will only be powered after the panel has been through a purge cycle.

Cooling: This is potentially more complicated, with multiple options available. Vortex Coolers are very commonly used with purged & pressurized enclosures since such panels already have compressed air supply available. These devices operate by separating a spinning air stream into hot & cold fractions, and discharging the hot fraction to the outside of the enclosure while using the cold fraction inside the enclosure. The difference between hot & cold can be quite dramatic (80-100° C) and for hazardous are use, vortex coolers are restricted so that the hot air exhaust port doesn't exceed the local T-rating. Generally speaking, Vortex Coolers are suitable for 300 – 800W of cooling and for outdoor use, as noise levels can be high.

The other main cooler type is based on heat exchanger technology, and can be simple air-air (less commonly, air-water) heat exchangers, or use refrigerant cooling with compressors & pumps. For use with purged & pressurized enclosures, the system should be selected to maintain a sealed interface between the internal enclosure and the external environment. Simple air-air heat exchangers will not get internal temperatures below external ambient conditions, so Expo recommend air conditioning . Certified systems are available in versions for both Zones and Divisions, and with ratings up to 6kW.

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

Oct 2020

Simplifying Complexity. Delivering Safety.

Certification Update: Russian certification for Expo's minipurge range

EAC

Expo are pleased to announce that our Russian Minipurge certificate has been renewed. This covers the entire range of small purge systems for enclosures right through to our large motor purge systems.

Expo's purge systems carry the widest range of hazardous area certifications, making them suitable for projects anywhere in the world.
