

## Motor Systems for Low Temperature Applications

**Motor Purge capable of operating in extreme environments**



### Application

As oil & gas extraction has pushed into new, often more extreme environments, both the use and the protection of large motors starts to become problematic. A major motor OEM brought us a challenge to develop a motor purge system capable of operating in very low ambient temperatures.

### Solution

Very low ambient temperature plays havoc with electronic components such as LCDs and with the mechanical strengths of steels and plastics, leading to premature failure through reduced resistance to vibration and impact loading. Purge & Pressurization (Ex p) standards expect the purge air to be between -20°C and

+40°C and offer limited guidance on how to handle lower extremes. Most purge systems are certified for use between -20°C and +55°C. Long exposed outlet piping from site air compressors often leads to the purge air becoming very cold, making a 'black start' very time-consuming, even with anti-condensation heaters inside the motor framework.

Building on Expo's proven purge systems and CLAPS technology, we developed a range of heated motor purge units that could push the ambient as low as -60°C. Using Ex-certified heating components, high-efficiency insulation, and incorporating monitoring systems for critical temperatures, our low-temperature units have been successfully certified by a Notified Body and are becoming industry standard for extreme temperature applications.

If the instrument air supply is too cold: Where the temperature of the incoming air cannot be maintained, not only is there a risk of damage to equipment, but, critically, the system might be operating outside of its certification limits. Expo can provide users with additional security through a range of certified, in-line air heating units. These systems are specially designed for high flow applications and can be integrated into the overall motor purge installation.

## Expo Products and Services

### Typical System



### Motor Purge

Expo Technologies is the world leader in protection systems for large electric motors and generators. With the largest installed base of any manufacturer, we are a trusted partner to most of the world's leading manufacturers.

In line with all other electrical equipment used in hazardous areas, electric motors and generators require certification using a recognised protection method.

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