

PRODUCT INFORMATION

Freeze-Proof Modification for Ashcroft® Pressure Transducers

Use: For Water Media Only, in Freezing Environments

Applies to: Types G2, T2 and KM15 Pressure Transducers

The Problem

Measuring water pressure in freezing temperatures can damage sensitive electronic pressure measuring instrumentation. Despite an operator’s best effort to drain and purge water from a system, a small diaphragm cavity and pressure passage inside the transducer’s sensor can trap or hold water. When frozen, the expanding ice can force the diaphragm beyond its travel limits, causing it to permanently distort. Once the ice is melted away, the transducer will no longer return to zero, rendering it unusable and requiring replacement.

Engineered Solution

To eliminate the problem, Ashcroft® engineers have developed a unique modification in which a stable, emulsified lubricant is injected into the diaphragm cavity and most of the inlet passage. This viscous material displaces air and seals the cavity, thus preventing water from contacting the diaphragm and settling in the cavity. Once injected, the emulsion adheres to the inner walls of the sensor and forms a thin skin inside the inlet passage, preventing it from leaking out of the sensor, even when the transducer is mounted in the upright position. As water pressure is introduced, the emulsion serves as a translation medium, exerting a force upon the diaphragm equal to the force exerted upon it by the pressurized water.

Effect on Performance

With the addition of the translation medium, a slight deviation from the transducer’s advertised specifications for accuracy and response time may result. However, in most applications, this variance may be regarded as insignificant.

Common Applications

Ashcroft® transducers equipped with this modification are intended exclusively for use in monitoring water pressure in environments with freezing temperatures. Such installations may include irrigation systems, firefighting equipment, snow making equipment and frozen food processing.

How to Order

As the addition of the translation medium is a custom application solution, Ashcroft Inc. technical personnel would like to review each application requirement and evaluate suitability. Therefore, there is no ordering code or “X” variation established for this modification. Each customer-specific variant will be assigned a unique “#” (pound sign) variation once the specifications have been established with the customer. Inquiries for the “freeze-proof” modification should be directed to the transducer product marketing group.

