Bearing Lubrication Monitor

Applications:

- Bearing Lubrication Monitor
- Bearing Lube Flow Monitor
- Bearing Lube Temperature Monitor
- Rotating Machinery Protection

Application Background:

In heavy industries utilizing large numbers of rotating machines it is imperative to monitor the lubrication of the main bearings to avoid failures that could be of a safety concern and most certainly lead to downtime and lost productivity.

Typically, lubrication oil is pumped or gravity fed through tubing to the bearings from a reservoir. In more critical applications, heat exchangers are added to keep the lube oil at the ideal temperature for maximum effectiveness. A liquid flow switch installed in the tubing assures that lubrication is moving through to the bearings. With the addition of a temperature sensor as needed you have a complete bearing lubrication monitor.

Application Solution:

There are many fluid flow switch technologies including: sight glass, paddle, flapper, rotor, conductance, capacitance, etc. All have proven to work with varying degrees of success. Some rely on operator's attention and memory. Some have mechanical parts and prone to wear and failure. Still other electronic type probes require conducting fluids or fluids of different capacitance. Some just cannot handle the elevated temperatures of specific lubrication applications.

A better solution for bearing lubrication monitoring is the Thermal Differential Switch. The TD Switch has two thermal sensing devices (RTD's) encased in miniature stainless steel probes. One sensor detects the temperature of the lubrication fluid while the second has a small current applied to create a thermal differential temperature above the fluid temperature. The differential temperatures created between the probe in air and the probe in a liquid is different. Therefore detection of flow or no flow or flow at some minimum flow rate set point is achieved reliably, with excellent repeatability.

With a single process connection into the lubrication tubing a TD probe can provide for the proper dispensing of lube oil to the bearing. With the dual channel VersaSwitch® product from Delta M Corporation it is easy set one switch channel for the fluid flow and the second switch channel for a maximum temperature set point. Separate relays activate depending upon whether the sensor probe is sensing no flow or flow below a minimum set point or if the temperature has exceeded a safe set point.

For full details go to www.deltamcorp.com , click on Products, then Manuals, then VS5100-Dual Channel Switch and see Section 4.4.6 of the manual for the Liquid Flow and Temperature configuration-Model VS5100 VersaSwitch® application.