



Pumps Reliability and Efficiency Monitoring System: PREMS-2A Technology



One of the keys to maintaining reliable processes is having healthy and dependable processing equipment. Centrifugal pumps represent a prominent category of process machines that can have a significant impact on operations reliability when they act up. To ensure your pumps are healthy and serviceable, they should be monitored regularly for signs of mechanical degradation, due to wear (see worn pump impellers below) or pluggage. A new monitoring and system is now available from **Pumping Machinery** that makes evaluating your centrifugal pumps easier than ever before.



Two badly worn centrifugal pump impellers

Pumps Reliability and Efficiency Monitoring/Measuring System (PREMS-2A) is an on-line, live data acquisition system, specifically designed and custom-made for the on-line, live automated construction of the actual (real) performance curve (head, power, efficiency versus flow). It compares the true performance to the expected OEM curves with the current pump performance, and also displays the additional cost associated with operating at the degraded performance conditions. For example, a 10% reduction in efficiency of a 1000 HP pump will cost you an additional \$65,349 yearly in energy cost, assuming a nonstop operation and \$0.10 cost per kW-Hr. The PREMS-2A system helps identify such issues and point out viable solutions.



The basic/standard PREMS-2A System comes with :

- ✓ Suction and discharge pressure transducers
- ✓ One current transformer for measuring the electrical load
- ✓ Flow can be obtained with either an existing flow meter output or a provided ultrasonic meter
- ✓ Two temperature transmitters
- ✓ Two accelerometers for measuring pump vibration levels

The PREMS-2A System includes a total 8 probes (i.e. (8) 4-20 mA signals) with cables, a rugged enclosure, and a dedicated PC with software. The complete monitoring system may be either purchased or rented. It can be also custom-made and expanded for several pumps.



PREMS-2A Monitoring System

Field installation of the monitoring system and will allow you to begin transmitting data, the same day via either the plant network or internet. The system includes hardware, software, a computer, and all probes (pressure transducers, flow, amps CT coil) with extension cables. The monitoring system can also capture vibrations and temperatures of bearing housings and is capable of providing full spectral (FFT) analysis of vibration waveforms. Vibration and temperature monitoring can be viewed on-line, live, and continually. Note: accelerometers and temperatures probes are also included in the price of the system.

To see examples of how the PREMS-2A System constructs performance, curves visit the following site:

www.pumpingmachinery.com/consulting/PREMS-2A/prems-2a.htm

The system, including training, will also be demonstrated during the training session at:

www.pumpingmachinery.com/pump_school/pump_school.htm

For more information, email or call:

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