



THE PROBLEM:

According to the *Hydraulic Institute*TM, pumps consume **25% of all industrial energy** and typically operate under **40% efficiency**. Inefficient operation of these pumps is largely due to the lack of pump system standards. Due to the high criticality of **Boiler Feed Water Systems**, inefficient operation & blind PM's cost the industry, on average, **\$500,000** over the life of the pump.

Here's why...

-  KCF has found failure modes are often linked to non-ideal operating conditions, poor system design, and/or poor operational practices rather than normal wear and tear to mechanical components².
-  The lack of necessary monitoring parameters leads to a misunderstanding of root cause, misdiagnosing faults, and improper/unnecessary PMs.

WHAT KCF CAN OFFER

KCF offers a comprehensive machine health hardware and software solution that ensures complete transparency and a holistic system view. Add new monitoring points or integrate existing data in real time with no added security risk.

Monitor Key Parameters on One Platform:

- ✓ Vibration
- ✓ Inlet/Discharge Flow
- ✓ Inlet/Discharge Pressure
- ✓ Surface/Internal Temperature
- ✓ Valve/Motor Status
- ✓ Motor Current/Voltage
- ✓ General Input
- ✓ And More...

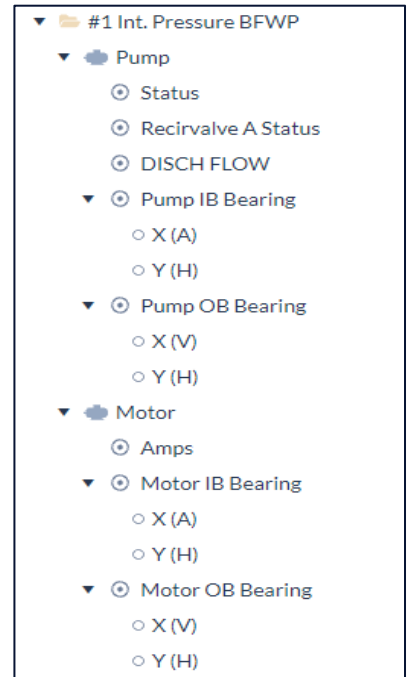


Figure 1: Build custom hierarchies in SMARTdiagnosticsTM for your specific pump parameters.

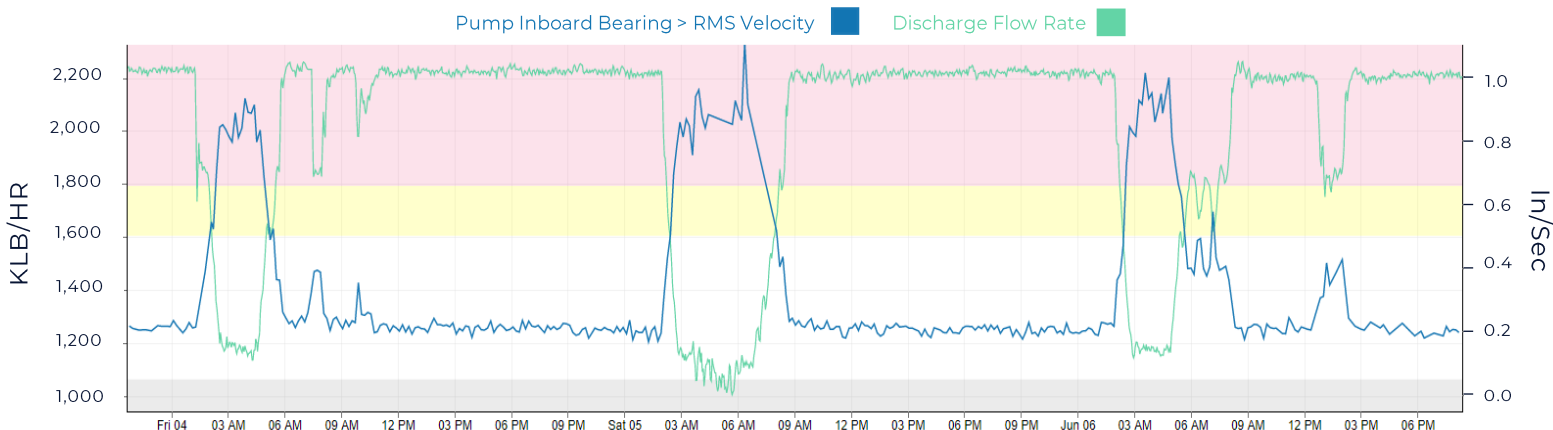


Figure 2: Plot display of SMARTdiagnosticsTM to connect process data and observe system behaviors.

Completely Outfit Your Pump Using KCF Hardware to Monitor Common Fault Types

	Pressure Monitoring Points	→	Low Suction or Discharge Pressure, Operating Off of Pump Curve, Irregular Pressure Fluctuations
	Oil Quality Monitoring Points	→	Particles Present, Water in Oil, Insufficient Oil Levels
	Motor Voltage Monitoring Point	→	Phase Imbalance, Over/Under Voltage
	Motor Current Monitoring Point	→	Overcurrent, Load Imbalance, Efficiency
	Vibration & Temp Monitoring Points	→	Resonance, Imbalance, Misalignment, Cavitation, Coupling Issues, Bearing Wear, Motor Internal Issues

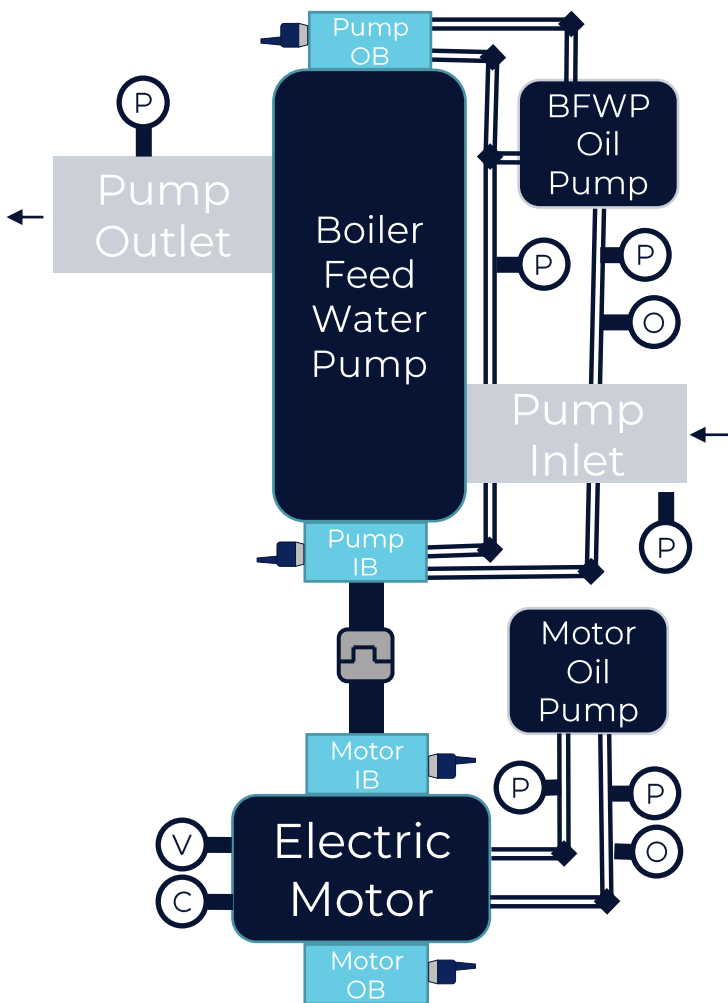


Figure 3: KCF Outfitted Boiler Feed Water Pump Diagram for Display Purposes, Actual Sensor Counts & Layouts Will Vary

KCF Hardware Offerings



Pressure Sensor



Oil Quality Sensor



IoT Hub



General Input Sensor



Wireless Vibration Sensor

Want to learn more?

Call **814-867-4097** | Email **sales@kcftech.com** | Visit **www.kcftech.com**