Parker Remote Monitoring Program & Services

Presented By: Jason Dunn

ENGINEERING YOUR SUCCESS.
Parker Diagnostics

Software

Hardware
Parker Remote Monitoring & Services

- Services
- Software
- Hardware

Cloud Based Computing

- Good $/month
  - 1-10 Sensors
  - 1 Heartbeat/min
  - 2 Months Storage

- Better $$/month
  - 10-500 Sensors
  - 30 Heartbeats/min
  - 6 Months Storage

- Best $$$/month
  - >500 Sensors
  - 90 Heartbeats/min
  - 2 Year Storage

SensoNODE
Parker Remote Monitoring & Services

Hardware

- Common Design Platform
- Robust Wireless Protocols
- Battery Powered Nodes
- Multiple Wireless Bandwidths
  - 900 MHz (869 MHz Europe)
  - 2.4 GHz
  - Bluetooth 4.0
- Cloud Based or Point to Point Connectivity
  - Cellular
  - Wi-Fi
  - Ethernet

New Technology Sensor Element

PRESSURE
TEMPERATURE
HUMIDITY
VIBRATION
Advantages of using EAP sensing technology:

- Ultra low power consumption (2-10X more power efficient than Piezo resistive sensing technology)
- Ideal for small battery operated or energy harvesting wireless sensing solutions
Multi-Layer EAP Imbedded PCB’s

Stack-Up & Multi-Layer Construction

PCB
Adhesive
Film
Top Electrode
Bottom Electrode
Adhesive
PCB
Heat Press

EAP Imbedded PCB Panel
Example: Electro-Active Polymer Pressure Sensor

Wired and Wireless Pressure Sensors

Electro-Active Polymer Sensing Element
- Parker Proprietary Technology
- PCB Imbedded Sensing Element

Hermetic Fluid Protection Buffer
- Various Pressure Ranges
- Can be Used for Both Liquid and Gas

Sealed Sensor Housing

Environmental Protected Battery Enclosure

Ultra-Low Power Consumption
- Wired or Wireless Connectivity
- Battery or Energy Harvesting Options Available

Microprocessor Controlled
- Environmental Compensation
- User Programmable Calibration data storage

Parker Fitting Body
- Many Possible Configurations

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Software

- Global Data Architecture
- Supports Multiple Platforms
- For Predictive and Health Monitoring Applications
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Services

- Data Subscription Model
- Data Analytics
- Installation Services
- Data Management Consulting
Production Launch Schedule

Limited Release - Now:

• Vibration Monitoring System (VMS 1.2)
• Vibration Sensor
  • Includes integrated temperature sensor

General Release – Quarter 1, 2014:

• Industrial Monitoring System (IMS 2.0)
• Full Sensor Offering
Case Study: Wind turbine monitoring

Challenges:

• Monitor operations of generators for efficiency & maintenance
  • Older / smaller wind turbines without monitoring
  • Balance & shaft alignment issues can reduce efficiency
  • Bearing wear that leads to premature failure

• Remote monitoring essential
  • Inaccessible locations w/ limited access

• Extremely cost sensitive market
  • Must be very simple and low cost to install and operate
Case Study: Wind Turbine Monitoring

Assessment of Generator Alignment

Identify change in behavior
Case Study: Dewatering Centrifuge

Reduce Downtime

• Value: Monitor imbalance impact on bearing life
• Installation: < 20 minutes
  • 2 Centrifuges & motors
  • Radial & axial bearing points
  • Collection server w/ cloud upload
Case Study: Production Machining Operation

Improve Quality

- Repeatable Cut-off Profile
- Detects Tool Wear and Breakage
- Eliminates Scrap
Case Study: Industrial Production Operation

Predictive Maintenance

- Machine vs. machine comparisons

Operating Temperature: Δ ~21°F
Thank You

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