



# ***PROTECT*** Wireless



24/7 Online Monitoring & Evaluation System



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***PROTECT*** Wireless is an advanced 24/7 online monitoring and evaluation/diagnostic system. It cost-effectively blends conventional PdM machinery protection and analytics with energy, operational and process monitoring. This powerful package delivers a comprehensive picture of machinery and facility conditions with email/text message alerts and remote data analysis on your smartphone and computer. As a smart system, ***PROTECT*** Wireless uniquely merges sensor data with existing SCADA/PLC data for advanced diagnostic correlations to predict operational, environmental and maintenance problems.

***PROTECT*** Wireless is a highly scalable and customizable intelligent online monitoring and evaluation system which seamlessly blends predictive maintenance, energy, operational and process monitoring into one package for a complete picture of facility-wide conditions. The system also provides email and text message alerts along with remote real-time data/vibration analysis all on your smartphone for ever-deteriorating conditions. As a result, ***PROTECT*** Wireless uniquely enables offsite decision makers and onsite personnel to promptly consult with experts from around the globe. These experts can remotely analyze and diagnose the data via computer and smartphone, so decision makers can make quick, confident and informed decisions.

***PROTECT*** Wireless provides a great opportunity for every organization to quickly identify machinery faults so onsite personnel can efficiently repair the problems so their operations are never compromised.



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## Hardware



**Coordinator**



**Satellite**

The system consists of a Coordinator and one or more Satellites that are located near the equipment/machinery being monitored. The Satellites collect the data from all the sensors attached to the nearby machinery/equipment plus existing plant SCADA/PLC data and communicates it all wirelessly to the Coordinator which displays and stores it via computer with total control through the internet.

Each Satellite comes with numerous options from one (1) to eight (8) simultaneous channels of data collection and each multiplexer offering 32 input channels, but can be ordered in groups of eight (8, 16, 24, 32) channels. These multiplexers can be joined together to offer over 100 inputs while also enabling the Satellite to accept nearly any type of sensor.



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*Satellites are placed on or near the machinery and are directly wired to the sensors. After that – **NO WIRES**. Quick and easy set up for permanent or temporary installations.*



**Satellite**

*The data is processed and initially analyzed by the satellite, then wirelessly broadcast at a 2.4 GHz 802.15.4 industrial standard frequency to the coordinator.*



**Coordinator**

*The coordinator relays the data to the computer for display, storage, further analysis and reporting. One coordinator may communicate and control multiple satellites as well as have them provide data in real-time to users anywhere around the globe.*



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## **Software**



**Top Level**

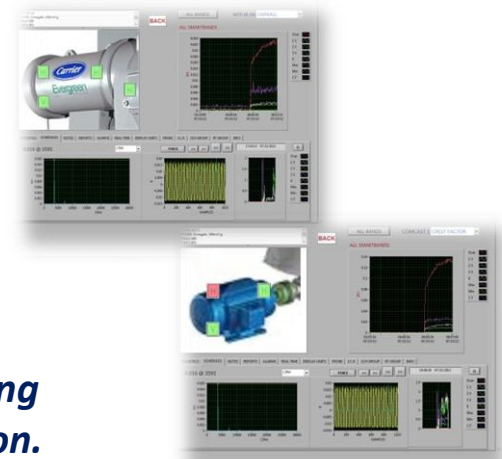


**Mid Level**

*The simple image user interface provides machine and sensor hotspots which change colors based on the severity of any detected faults for instant problem recognition.*

*Clicking on the colored hotspot launches a new level revealing additional analysis details for quickly evaluating the situation.*

*Each of the three information levels are fully customizable with images to show your logos, buildings and equipment.*



**Bottom Level**



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## Simple User Interface

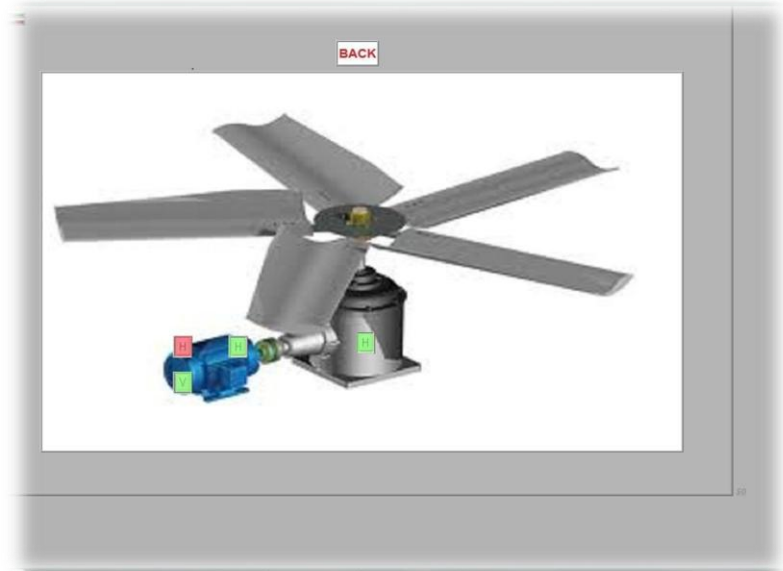
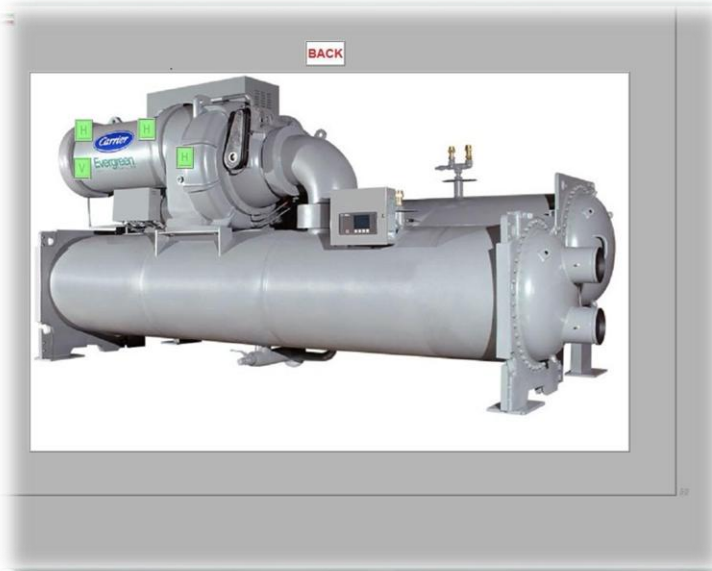


The software's top level allows users to understand the entire plant's condition at a glance. You can quickly identify any issues with simple machine icons which change colors based on the severity of any detected problems. Clicking on a given icon immediately takes you to more detail at the machine level.



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Pictures are worth . . .



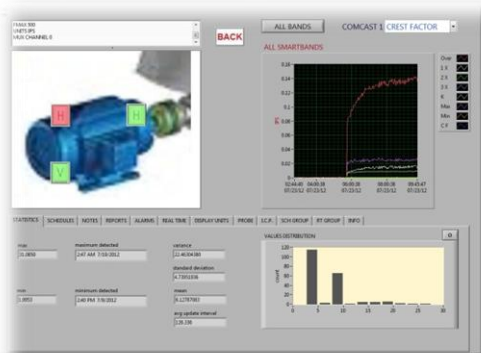
In a simple picture, the software's mid level distinctly reveals the specific part of the equipment and sensors that are in alarm. One mouse click on the alarming icon and you immediately access a wealth of information with trends, statistics, historic and real-time raw data from the sensor.



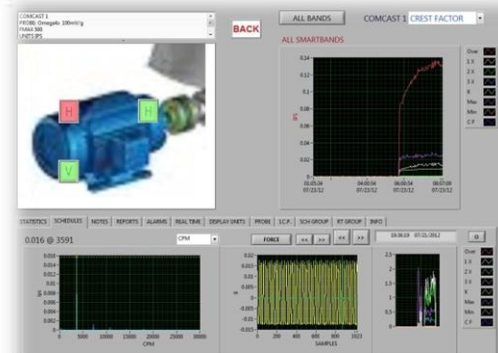


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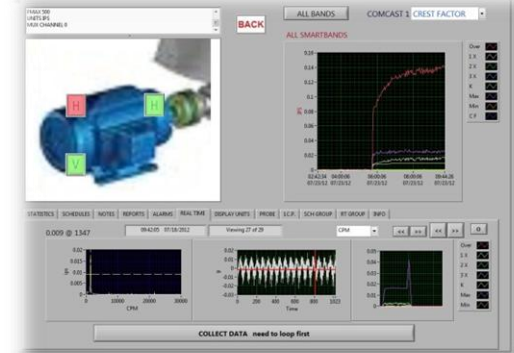
## A Wealth of Information



Statistics



Historical Data



Real-time Data

In the past, analysts and engineers needed to be onsite to diagnose machine problems but *Protect* Wireless has changed this. At the bottom level, the system's extensive analytics and internet accessibility promote advanced remote diagnostics. All this information empowers the analysts to identify explicit machinery faults, recommend specific inspections, tests and repairs to help resolve the issue.



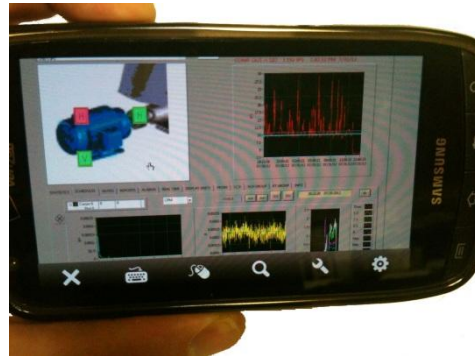


# ***PROTECT* Wireless**

## **Connectivity & Mobility**



**Smart Phone Site View**



**Detailed Analysis**



**Text Message Alerts**

No matter where you are, the information is always at your fingertips. So faults are found early and decisions made quickly to resolve issues well before they have time to deteriorate and compromise the operations.



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## **Data Goldmine**



- Until now dynamic vibration (spectra) and plant process/operational data have, for the most part, remained separated. This system bridges that gap and opens our eyes and minds to a world of possibilities.
- This advanced system provides an absolute view of your machinery conditions with detailed spectral, phase and cross-channel analysis on couplings, bearings and even separate machinery. This and other innovations present remote analysts with instant diagnostic data which, until now, required expert-personnel onsite. As a result, users can access each sensor's extensive analytics with statistics, real-time and historic data, individual and group sensor trends and much more, so experts can provide the same advanced diagnostics remotely as they would if onsite.



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## **Smarter, Greener Planet**



- The ultimate value of this smart system goes well beyond finding specific machinery problems and energy losses but lies in the data it generates. This data holds a wealth of information when mined for analytical correlations can predict future operational, process, environmental and maintenance issues.
- Different data combinations may produce advanced diagnostic solutions not previously possible, revealing an unlimited world of solutions. This smart world will also feed off itself, blending old with new data and sensors yielding a profound understanding of our most perplexing problems.