

LISTEN.
THINK.
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ROCKWELL SOFTWARE E-MONITOR FAMILY

PREDICTIVE MAINTENANCE TOOLS TO MAXIMIZE
YOUR PLANT RELIABILITY

EMONITOR FAMILY

AN INTEGRATED SUITE OF MAINTENANCE DATA FUNCTIONS.



Optimizing Your Condition-based Maintenance Program



Condition Monitoring increases your overall knowledge of asset condition and allows you to perform Condition-based Maintenance (CbM) by proactively scheduling downtime, labor and materials based on machinery health. A well-implemented CbM program can positively impact critical Key Performance Indicators (KPI):

- **Return on Net Assets (RONA)**
 - Lower inventory costs
 - Reduce spare parts
 - Defer scheduled maintenance
- **Overall Equipment Effectiveness (OEE)**
 - Improve availability, rate, quality, and safety
 - Reduce unplanned downtime and planned downtime duration
 - Reduce mean time to repair (MTTR)

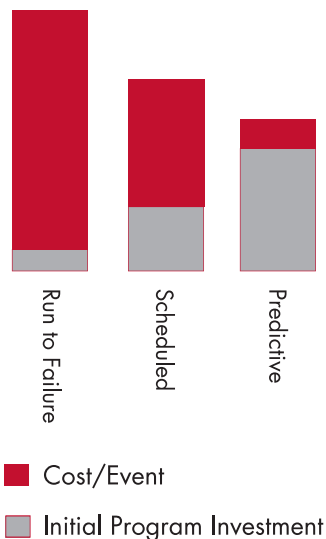
Realizing the full benefits of a CbM program requires not only knowledgeable resources, but also tools that allow you to collect, analyze and respond to findings in a an efficient manner. The Rockwell Software Emonitor® family of products allows you leverage your plant floor data and help you reach your production and business goals.

Today's globally competitive economy has resulted in significant shifts in the relationships between producers, suppliers, and consumers. The need for improved production reliability and reduced expenses is clearly demonstrated by production strategies such as "just-in-time" material supply and delivery.

As a manufacturer, to be successful in this environment, it is vital that you optimize your investment in critical production assets. Simply put, to ensure future growth, you must maximize your Return on Net Assets (RONA= (Plant Revenue-Costs)/Net Assets).

The Rockwell Software Emonitor family of products provides you with a suite of integrated maintenance data functions to leverage information about your production assets. This enables you to make intelligent, informed decisions that optimize uptime, reduce inventory, cut production and maintenance costs, and improve your Overall Equipment Effectiveness (OEE = Availability x Rate x Quality).

Maintenance costs can represent as much as 40 percent of revenue.



TYPICAL COST OF UNPLANNED DOWNTIME EVENT BY INDUSTRY:



Steel: \$42,000



Paper: \$36,000



Rubber: \$25,000



Plastic: \$12,000

EMONITOR PLANT WIDE ASSET DATA INTEGRATION FUNCTIONS

- **Asset Register** for storage of critical information on plant assets.
- **Condition Monitoring** based on a variety of condition data on the plant assets.
- **Asset Health Analysis** through fast and efficient detection and diagnosis of specific machinery problems.
- **Intelligent Advisory Decision Module** contains rules derived from Entek®/IRD/Rockwell's 50+ years of experience in Condition Monitoring.

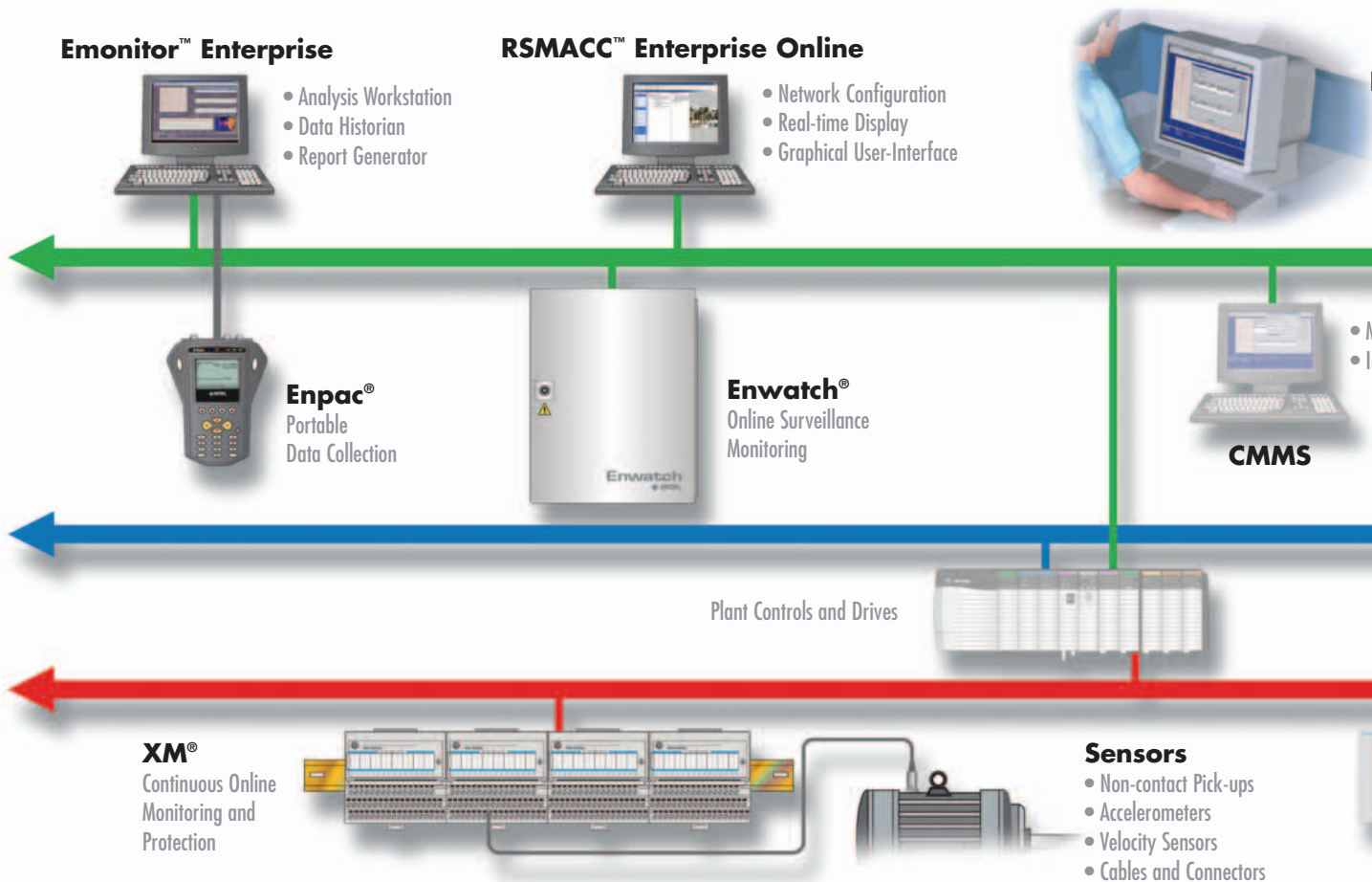
Analyst can modify and create rules to match specific user machines.

Software learns machine's characteristics as more data is brought into system.

- **Operations and Maintenance Advisories** to document and communicate these results to plant personnel, and systems to drive corrective action.
- **Web Client Access** allows you to distribute data and alarm information easily across an enterprise. Emonitor fulfills these requirements by providing the widest range of condition monitoring tools available on the market today. These include superior communication of the results using e-mail or graphic mimic displays of condition indicators and, optionally, integration to other market-leading manufacturing systems. Emonitor Web Client also provides remote data load/unload and reporting capabilities.

ASSET REGISTER

With Asset Register, you may identify component and asset information to help diagnose individual components such as motors, gearboxes, fans. Asset information can include data such as number of rotor bars, number of impeller vanes, nameplate information or other pertinent data.



CONDITION MONITORING

Emonitor includes the widest range of data harvesting tools available today. Using these tools, Emonitor can assist you with:

- Inspection Data Logging
- Process Data Logging
- Vibration Data Collectors
- Oil Analysis Instrumentation
- Oil Analysis Laboratories File Import
- Calculated Measurements
- Surveillance Vibration Data Collection (Allen-Bradley Enwatch and XM® Series)
- Protection Vibration Data Collection (Allen Bradley XM Series)
- Process Historian Gateways
- OPC (OLE for Process Control)

Emonitor offers you support for the latest generation of Enpac® Windows CE-based data collectors, as well as the Datapac® family, previous generation Entek products and many data collectors. Emonitor can also support streams of data coming in from a variety of permanently installed third-party systems, including:

In addition, Emonitor will manage images (in any of over thirty file formats) and ActiveX® data objects. This is particularly useful for infrared thermography data, magnified images of oil samples, or other condition-indicating technologies. This broad range of data sources supports many of the advanced capabilities of Emonitor. Statistical alarms, condition diagnostics, and state-based alarms are all more powerful or practical because of these Emonitor data-harvesting capabilities. This range also helps Emonitor meet the measurement requirements of your plant machinery – whether you need process, vibration, oil analysis or infrared thermography on a periodic, surveillance or protection basis – Emonitor can help fulfill your requirements.

THE KEY TO A SUCCESSFUL CBM PROGRAM IS A WELL-INTEGRATED SOLUTION.

Reliability OnLine

Remote Monitoring
and Analysis



Maintenance Scheduler
Inventory Management



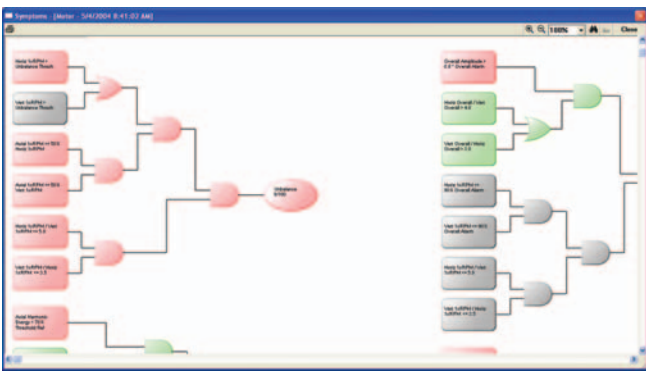
Plant HMI

By integrating your systems and processes, you can leverage multiple technologies and implement different monitoring strategies. Integration also allows you to reduce your total cost of ownership by utilizing your existing plant information and control platform through connectivity with the enterprise and utilization of industry standard protocols.

Rockwell Automation is an automation industry leader in maintenance solutions. From innovative software applications such as Emonitor and RSMACC®, intelligent hardware like XM Continuous Online Monitoring and Protection modules, to Rockwell Automation Services and Support, we can provide you the tools and knowledge to meet your maintenance and business goals.

ASSET HEALTH ANALYSIS UTILIZING INTELLIGENT ADVISORY DECISION MODULE

Emonitor constructs a diagnostic model of the plant machinery based on the mechanical design information, such as bearing information, shaft configuration, gear design, fan blade design or motor data. Emonitor includes a reference database of over ten thousand bearings to facilitate this task. The diagnostics may be operated interactively, automatically utilizing the powerful Intelligent Advisory Decision Module. The condition monitoring analyst uses this information to create an Emonitor analysis or configures the software to create the analysis automatically. The Emonitor analysis captures the relevant information for this event. Based on the analyst's input, a record of the diagnosis, severity, and symptoms is recorded.



OPERATIONS AND MAINTENANCE ADVISORIES

Maintenance advisories identify a specific corrective maintenance action and the priority for this action. Maintenance advisories may be sent via e-mail or may be directed to a specific EAM system to create work requests automatically to start the corrective process. One of the most important functions associated with maintenance advisories generated from Emonitor is the ability to report and plot the advisory information. This information is presented to you in a graphical form as a work history/trend plot. This Gantt-type chart indicates the maintenance advisories that have been issued and their status with the associated dates. From this information, the condition data may be correlated against work information, providing an evaluation of the effectiveness of the work performed.

OPERATIONS AND MAINTENANCE GATEWAYS

Gateways are the key to a successful, integrated PAM solution. These Gateways may be added as options to the base Emonitor system and serve as the portals that allow different plant systems to communicate by sending information back and forth, thus making critical decisions about asset management. With the Emonitor Asset Health Module and the EAM/CMMS Gateway working together, you can efficiently drive the execution of maintenance on your plant assets. For example, a condition-monitoring analyst or reliability engineer uses a statistical alarm to detect a problem. The Emonitor diagnostics tools have identified this problem as imbalance. Based on knowledge of this plant machinery and its previous history, this problem is identified as the result of process debris accumulating on the rotor of the process air blower. Removing this debris will correct the problem and prevent further damage to the machinery.

With the EAM/CMMS Gateway, the analyst now has the option to send these results automatically to the EAM/CMMS system. This work order will then appear in the EAM/CMMS Work Order Module. As the work is approved, scheduled, and completed, the status of the work order flows directly back from EAM/CMMS to Emonitor through the EAM/CMMS Gateway, making the progress of the work immediately visible to the condition monitoring analysts. This Gateway currently supports either the MAXIMO® product line from MRO Software® or MP2 from Datastream®.

Active	Component	Description	Severity	Likelihood	Symptoms	Source
Yes	<PA.FAN #1>	Antifriction Bearing Pro	Low Sever	25		(default)

Order	Description	Priority	State
1	Replace Bearing at Next Shutdown	High Level 1	Not Sent

The Emonitor suite of condition monitoring products is one of the leading machinery analysis systems in the industry. By incorporating multiple data sources, such as online vibration systems, hand-held data collectors and OPC servers, Emonitor can easily present a complete picture of the state of your machinery. Adding to that vast source of data is a collection of analysis tools that include statistical-based alarms and rule-based logic that allow you to quickly identify problem areas among large amounts of data. By identifying those areas, you can begin the corrective actions and increase your productive uptime quickly and efficiently.

HOW TO ORDER

Workstation

9309-ODBS000ENE - Unlimited

9309-ODBS500ENE - 500 Tag

Factory

9309-ODDX000ENF - Unlimited

9309-ODDX500ENF - 500 Tag

Enterprise

9309-ENSH000ENF - Unlimited

9309-ENSH500ENF - 500 Tag

MORE INFORMATION

More detailed information on Emonitor products and their capabilities is available in the literature listed below.

Emonitor Alarming Techniques Technical Data

EMONTR-TD006A-EN-D

Emonitor Asset Health Module Technical Data

EMONTR-TD001A-EN-D

Emonitor CMMS Gateways Technical Data

EMONTR-TD003A-EN-D

Emonitor Intelligent Advisory Decision Module Technical Data

EMONTR-TD004A-EN-D

Emonitor OPC Interface Technical Data

EMONTR-TD005A-EN-D

Emonitor Web Client Technical Data

EMONTR-TD002A-EN-D

Emonitor Features

	Workstation	Factory	Enterprise
Single-user Configuration	•		
Network Capable – Multi-user Configuration		•	•
OPC Client Capability	•	•	•
OPC Server Capability	•	•	•
Interface to RSBizWare Historian	•	•	•
Modbus Server	•	•	•
Emonitor Asset Health Module		•	•
Asset Registry			
Analysis & Diagnosis Definitions			
Internal Work Request Storage			
CMMS Gateway (MAXIMO)			◦
CMMS Gateway (Datastream)			◦
Email Gateway		•	•
PDA Driver			•
XM Emonitor Gateway (Unlimited)			•
Intelligent Advisory Decision Module			•
Web Client			•
Entek Data Collector Drivers	•	•	•
Entek Enwatch Drivers	•	•	•
MIMOSA Compatible	•	•	•
Vibration Data Storage & Presentation	•	•	•
Oil Data Storage & Presentation	•	•	•
Calculated Measurements	•	•	•
Data Storage Manager	•	•	•
Overall Alarms	•	•	•
Spectrum Alarms		•	•
Data Plots	•	•	•
Frequency Identification		•	•
Bearing Database		•	•
Statistical Alarms	•	•	•
State-based Alarms	•	•	•
Alarm Annunciation		•	•
Plantlink (graphical Interface)			•
Oil Lab Import	•	•	•
Basic Emonitor Reports	•	•	•
Custom Reporting		•	•

* Only one of the CMMS Gateways (MAXIMO or Datastream) is included with the enterprise bundle.

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