

A New

GOLD STANDARD

in Motor/Asset Management

MCEGOld™



Revolutionizing Electrical Reliability





The **FUTURE** of Motor/Asset Management Has Arrived

Introducing

MCETM
MAX

powered by

MCE**Gold**TM



Combining the latest technology, analysis, and information systems, MCEMAX powered by MCEGold is a complete motor/asset management tool for today's motor management needs. Designed to integrate testing, diagnostics, inventory control, scheduling, and cost containment in an enterprise arena, the system is an important step toward improving communication between plant maintenance and corporate management.

This marriage of maintenance and management is the first of its kind to provide technology, analysis, and information system in one package...and it's only available from PdMA Corporation, a leader in electrical predictive maintenance since 1983.

With MCEMAX powered by MCEGold monitoring your motors — in any plant around the globe — you can:

MAXIMIZE MAINTENANCE EFFICIENCY

- Regular maintenance is scheduled and performed when it is most cost effective for you.

MINIMIZE PRODUCTION LOSSES

- Potential motor problems are identified before they occur, minimizing losses due to catastrophic motor failure.

DECREASE OPERATING COSTS

- Downtime and repairs are scheduled during periods of off-peak demand.

INCREASE PROFITABILITY

- Reducing operating costs and production losses has a significant impact on profits.
- Improved report functions allow data mining, analyzing cost, inventory control, and scheduled repairs and maintenance.

MULTIPLE OPTIONS

- Choose to test offline or online with one system. Plus, choose to use it as a desktop, field, wireless, or network tester. You can also have access to both regular or wireless communication applications.
- Choose from three scalable database designs — Stand Alone, Small Business (single site) or Enterprise Edition (multi-site/multi-seat).

UTILIZE TODAY'S MEDIA

- Integrate with third-party applications, such as Microsoft® Excel®, for easy reporting and analysis.
- Communicate easily through database synchronization.
- No web server-based component is required for web services.
- MCEGold can communicate and provide multiple database support with MSDE and SQL server.
- Adaptable and flexible to serve your needs today...and in the future.

MCEMAX powered by MCEGold provides solutions to operate a plant at maximum efficiency and lowest cost. Technicians and managers alike will benefit from this powerful system's advanced testing, analysis, reporting, and information management features.

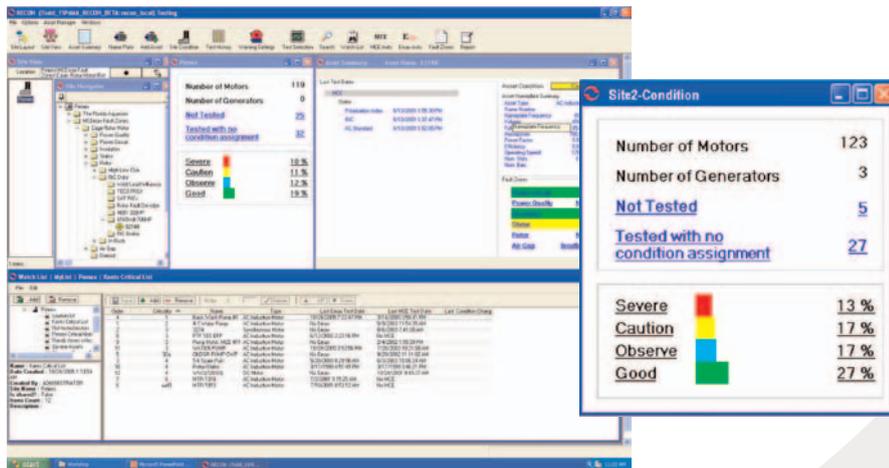
It truly is setting the Gold Standard for the future of motor management.

Enterprise Management: A Bird's Eye View



Without a doubt, one of the leading issues today in any company is processing information. While technicians are performing tests and maintenance, it's hard to find the time to communicate the necessary information to management. How much do they need to know? What reports should you pull? How much extra time needs to be spent explaining the reports?

MCEGold takes this into consideration and now has enterprise capabilities to provide management with their own information system. Technicians are now free to do their work and concentrate less on informing managers, and managers are able to see reports at any time that relate to their bottom line.



DASHBOARD

Managers need a quick overview of what is going on in motor/asset management. Site Condition provides a "Dashboard" that places key information at their fingertips. All motors/assets, and the severity level of each as determined by the technician, are listed. Managers can easily open notes (Message Center) and view any updates on the motor/asset in question. They can also create their own "watch list" to keep an eye on certain motors/assets.

SITE VIEW

What's a manager to do when he's responsible for motors/assets in multiple plant sites? Now, he doesn't have to leave his desk or spend hours pouring through multiple technicians' reports. With MCEGold, he can view motors/assets from plant to plant instantly. He can compare plants for tested motors/assets, key performance indicators for motor/asset condition, work monitoring, and benchmarking.

TECHNOLOGY

Nothing slows a company down faster than using obsolete technology. MCEGold uses a SQL database design to optimize bandwidth utilization, reduce network traffic, and use less "pipe." Using a Wide Area Network (WAN), MCEGold has multi-site capabilities with a centralized database. Most importantly, the software provides for faster data synchronization from field tester to server. Plus, because this system can convert data to XML, a platform-independent technology, you can now export and integrate third-party applications, create PDF documents, and more to make your job easier.

PdMA Corporation is the first in the industry to address the needs of both the manager and the technician, while integrating advanced technology and information system management tools to make a powerful system for your motor/asset management needs. You can rely on MCEMAX powered by MCEGold to grow and adapt with your company.



Day-To-Day Data Management

As a technician, your job can be very stressful. The health of every motor/asset in the plant is on your shoulders. You have to test, analyze, make decisions...and if anything goes wrong, there goes your weekend.

MCEGold makes it easier for you to test, analyze, and make decisions. Plus, with its advanced reporting functions, you don't have to worry about creating easy-to-understand reports for management. MCEGold does that for you. You can spend your time doing what you do best — keeping the motors running at top efficiency.

NEW FUNCTIONS

If you've used MCEMax before, you'll love some of the new features that MCEGold brings, such as:

- Multi-window Multi-tasking
- Search and Advanced Search Functions
- Motor/Asset Templates
- Increased Fmax for Demodulation out to 120hz
- User Preferences
- Time Zone Recognition
- Integration with Third-Party Applications, like Microsoft® Excel®
- MCE/EMAX Auto Data Capture
- DC Online

AT A GLANCE...

SITE CONDITION

Wouldn't life be great if you had one place that displayed all of your motors/assets and their condition? All it would take is a glance to see what motor/asset is critical or in need of attention. MCEGold makes this a reality. Instantly, you can view the number of motors/assets in the site, whether they have been tested, and the condition code status of each. You can easily see more detailed information with a click of the mouse. With this feature, you can manage your site's motor/assets. You can also use this report to create your own "watchlist" of motors/assets to "keep an eye on."

Type	Asset Name	Last Emax	Last MCE	Last Condition Change	Condition	Asset Path
Motor	# 7 Water Pump	No Emax	5/9/2003 11:54:35 AM		Severe	
Motor	3274	No Emax	8/6/2003 7:41:08 AM		Severe	
Motor	5-6 Spare Pulv.				Severe	
Motor	Back Wash Pump #1				Severe	
Motor	CNDSR PUMP CWP				Severe	
Motor	MTR 1013				Severe	
Motor	MTR 1374				Severe	
Motor	PTF 1BS BFP				Severe	
Motor	Pump Motor, MCE #11				Severe	
Motor	Rotor/Stator				Severe	
Motor	WATER PUMP				Severe	
Motor	WW2(728.03)				Severe	

Number of Motors	123
Number of Generators	3
Not Tested	5
Tested with no condition assignment	27
Severe	13 %
Caution	17 %
Observe	17 %
Good	27 %

WATCHLIST

A WatchList is a list of specific motors/assets that you create to "watch". You may choose to make a list of critical motors/assets, motors/assets with a specific condition code for that day, or a route for a specific technician. You can make as many WatchLists as you need. You can even drill down into a motor/asset summary to make daily management decisions even easier.

Criticality	Name	Last Emax Test Date	Last MCE Test Date
1	Back Wash Pump #1	10/24/2005 7:22:47 PM	3/14/2000 3:50:41 PM
2	# 7 Water Pump	No Emax	5/9/2003 11:54:35 AM
3	3274	No Emax	8/6/2003 7:41:08 AM
3	PTF 1BS BFP	6/12/2002 2:23:16 PM	No MCE
3	Pump Motor, MCE #11	No Emax	2/4/2002 1:55:39 PM
3	WATER PUMP	10/24/2005 3:53:56 PM	7/28/2003 10:21:08 AM
3a	CNDSR PUMP CWP	No Emax	9/29/2002 11:11:02 AM
4	5-6 Spare Pulv.	5/28/2003 8:29:56 AM	6/3/2003 10:06:24 AM
4	Rotor/Stator	3/17/1999 4:51:49 PM	3/17/1999 3:46:21 PM
4	WW2(728.03)	No Emax	10/24/2001 9:49:27 AM
6	MTR 1374	7/2/2001 9:15:25 AM	No MCE
aa45	MTR 1013	7/10/2001 8:53:12 AM	No MCE



TESTING

With MCEGold you can easily evaluate all six fault zones. Plus, you can set up automatic testing for MCE, EMAX or both. DC Online testing is also now available using EMAX.

STATOR

Phase-to-phase resistance, inductance, impedance, and current imbalances are used to determine turn or phase shorts as well as faulty internal connections

POWER QUALITY

The power being fed to a motor is the fuel it needs to operate efficiently. MCEGold monitors three phases of voltage and current, and alerts users when an unhealthy condition exists.

ROTOR

Identify cracked/broken rotor bars, porosity, and high resistance connections on the end rings through motor current signature analysis (MCSA) and the rotor influence check (RIC).

POWER CIRCUIT

All connections, components, and cables between the MCC and the motor must be resistively balanced. Potential problems occur when loose or corroded connections are introduced in a circuit. MCEGold compares each phase of resistance, current, and voltage to ensure a perfect balance

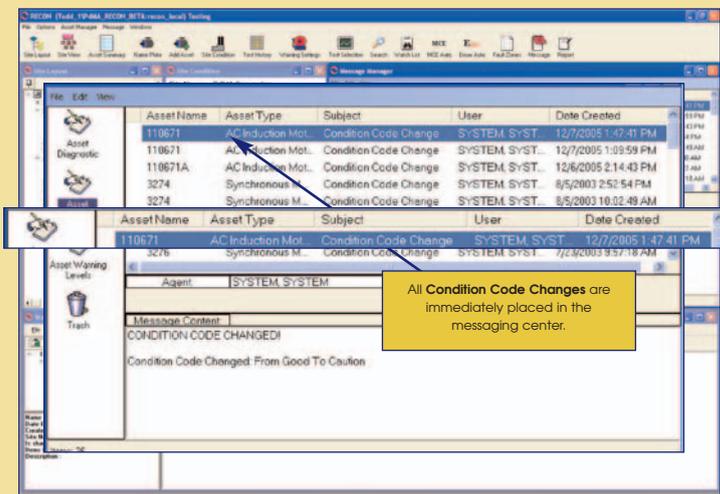
AIR GAP

Bowed shafts, cocked end rings, and degraded journal bearings create magnetic imbalances. These imbalances show up as 1st and 3rd sidebands around eccentricity frequency or as a "bow tie" shape on the RIC.

INSULATION

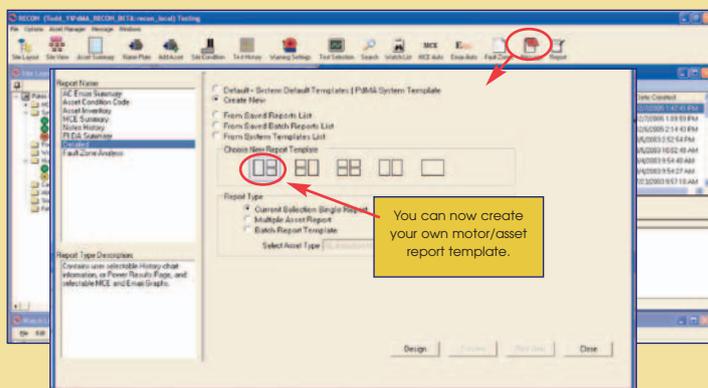
Resistance-to-ground values for motor windings decrease as moisture and contamination increases. MCEGold provides testing capabilities up to 5000VDC and offers continuous graphing polarization index (PI) and computer automated step voltage tests.

MESSAGE CENTER



So you have a critical motor/asset in severe mode and you know that management sees this on their reports. Will your phone be ringing constantly as you work to get that asset back to normal? Not with the Message Center feature at your disposal. All you have to do to keep management and other technicians updated on the progress of any motor/asset is enter notes in the Message Center. What's more, it automatically updates the notes when a condition is assigned, changed, or when the warning levels are changed. You can even add pictures and other documents to fully communicate the information at hand. You'll be able to concentrate on the work at hand, instead of answering multiple "What's going on?" phone calls!

DETAILED REPORTS



MCEGold has improved functionality to give you even better reports than before. You can easily pre-qualify motors/assets upon receipt and/or evaluate quality after costly repairs. Trending is a snap as MCEGold will store your motor/asset data automatically and alert you if there is an alarm condition. Reports can be generated as one or two-page reports and stored as HTML or PDF documents.



About PdMA



PdMA Corporation, a leader in predictive maintenance (PdM) and condition monitoring, provides electric motor/asset testing instruments and lubricant analysis services for organizations around the globe. PdMA's products and services are utilized by a wide variety of industries including: manufacturing, power/utilities, food processing, aerospace, petrochemical, pulp and paper, steel/aluminum, mining, motor repair and service, etc. With over 20 years of experience in the predictive maintenance industry, PdMA is dedicated to motor/asset management.

PdMA Corp. has developed three portable motor/asset testers:

- MCE™ — static (offline) tester
- EMAX — dynamic (online) tester
- MCEMAX powered by MCEGold — combination (offline/online) tester

All testers are designed to monitor and trend the condition of AC induction, synchronous, wound rotor, and DC motors and their circuits. Testing capabilities include: power quality, power circuit, stator, rotor, insulation, and air gap.

Since 1994, PdMA has hosted an annual Motor Reliability Technical Conference. Each May, approximately 200 motor/asset management professionals gather for a three-day conference consisting of case studies, training, peer presentations, and new information on the latest developments in electric motor testing and motor/asset management.

Awards & Accolades:

- ISO 9001: 2000 Quality Assurance certification
- *Inc. Magazine's* 1998 list of 500 fastest growing companies
- 2004, 2005, and 2006 *Plant Services Magazine's* Readers Choice Award in the Motor and Circuit Condition Monitoring category for MCEMAX



Call for more information, references, or a demonstration to see how MCEMAX powered by MCEGold can be the cornerstone of your motor/asset management program. Join these industry leaders in more accurately isolating motor/asset problems and reducing downtime.

- AEROSPACE:** The Boeing Company, NASA
- ALUMINUM/STEEL:** Arcelor Steel, Nucor Steel, USS-Posco
- ELECTRIC UTILITY:** Southern Company, Ameren-UE, Reliant Energy, Entergy Operations
- FOOD PROCESSING:** Cargill, General Mills, MasterFoods
- MANUFACTURING:** Eastman Kodak, Intel, Saturn, General Motors Corp., Ford Motor Co.
- MOTOR REPAIR/SERVICE:** Reliance Electric, Smith Services, Bufete de Mantenimiento
- PETROCHEMICAL:** Conoco Phillips, Chevron Products Co., Pemex, DynMcDermott, Syncrude Canada
- PULP AND PAPER:** International Paper, Boise Paper Solutions, Smurfit-Stone Container Corp., Weyerhaeuser, Abitibi Consolidated

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