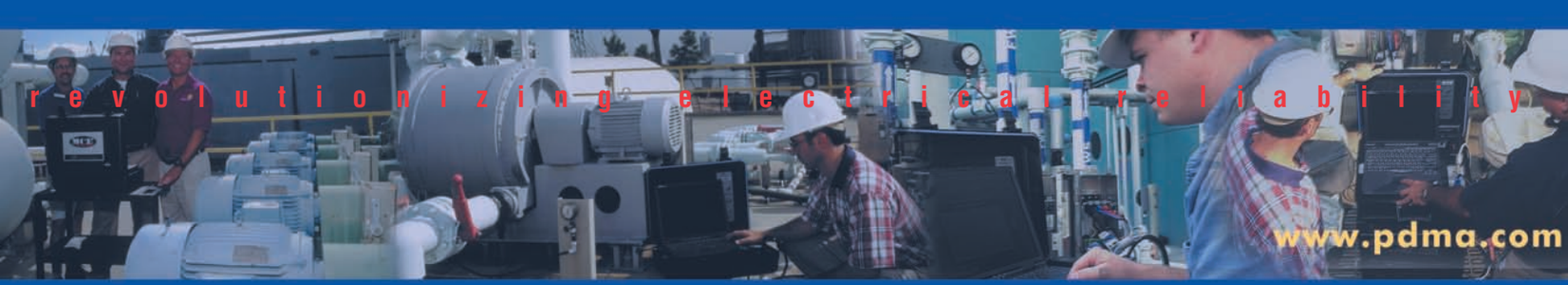
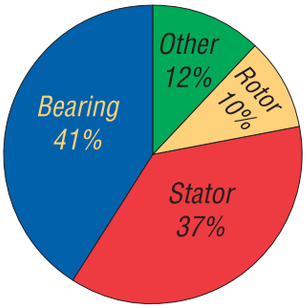
PdMA CORPORATION

Powerful Motor Management



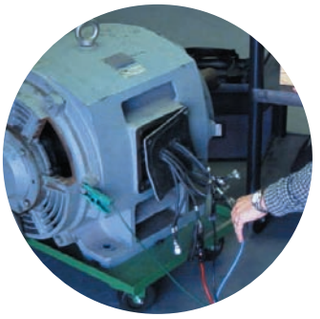
How Do Motors Fail?

Often electrical defects are the root cause, even when mechanical failure is the apparent cause. A study by the Electrical Power Research Institute (EPRI)* identified that a major source of motor failures were electrical.



Your Solution:

Complete your electrical motor maintenance program with the addition of the MCEMAX™ — the single most powerful component in your "toolbox." MCEMAX provides more information in ***three minutes*** than any other predictive technology. Use it for:



Quality Assurance

Pre-qualify motors upon receipt and/or evaluate quality after costly repairs.

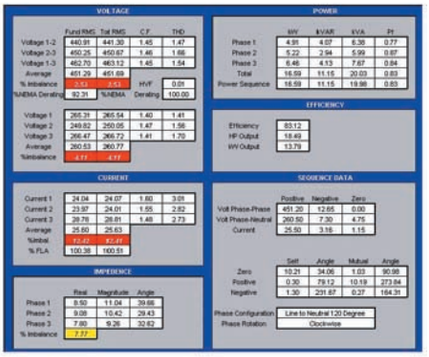
Test Date	06/03/2002	06/03/2002	06/03/2002
Test Time	10:01:58 AM	03:47:57 PM	04:16:53 PM
	Baseline		
Frequency	1200	1200	1200
Mohm Ph 1 to Gnd			
Charge Time	60	60	60
Voltage	1000	1000	1000
Motor Temp	30	30	30
Measured Mohm	3900.0	163.9	157.5
Corrected Mohm	2000.0	82.0	78.8
pF Ph 1 to Gnd	31500	45250	44750
ohm Ph 1 to 2	0.02800	0.05700	0.05650
ohm Ph 1 to 3	0.02800	0.05400	0.05350
ohm Ph 2 to 3	0.02800	0.05550	0.05550
mH Ph 1 to 2	2.395	2.425	2.170
mH Ph 1 to 3	2.340	2.390	2.325
mH Ph 2 to 3	2.390	2.415	2.350
Avg. Inductance	2.375	2.410	2.282
% Res. Imbalance	0.00	2.70	3.02
% Ind. Imbalance	1.47	0.83	4.89
$ Power Loss	0.00	84.14	84.14
Test Location	Motor Leads	Motor Leads	Motor Leads
MCE #	030489HV	030489HV	030489HV
User			
Notes	No	No	No

Trending

Easy to use software stores your motor data and immediately alerts you if there is an alarming condition.

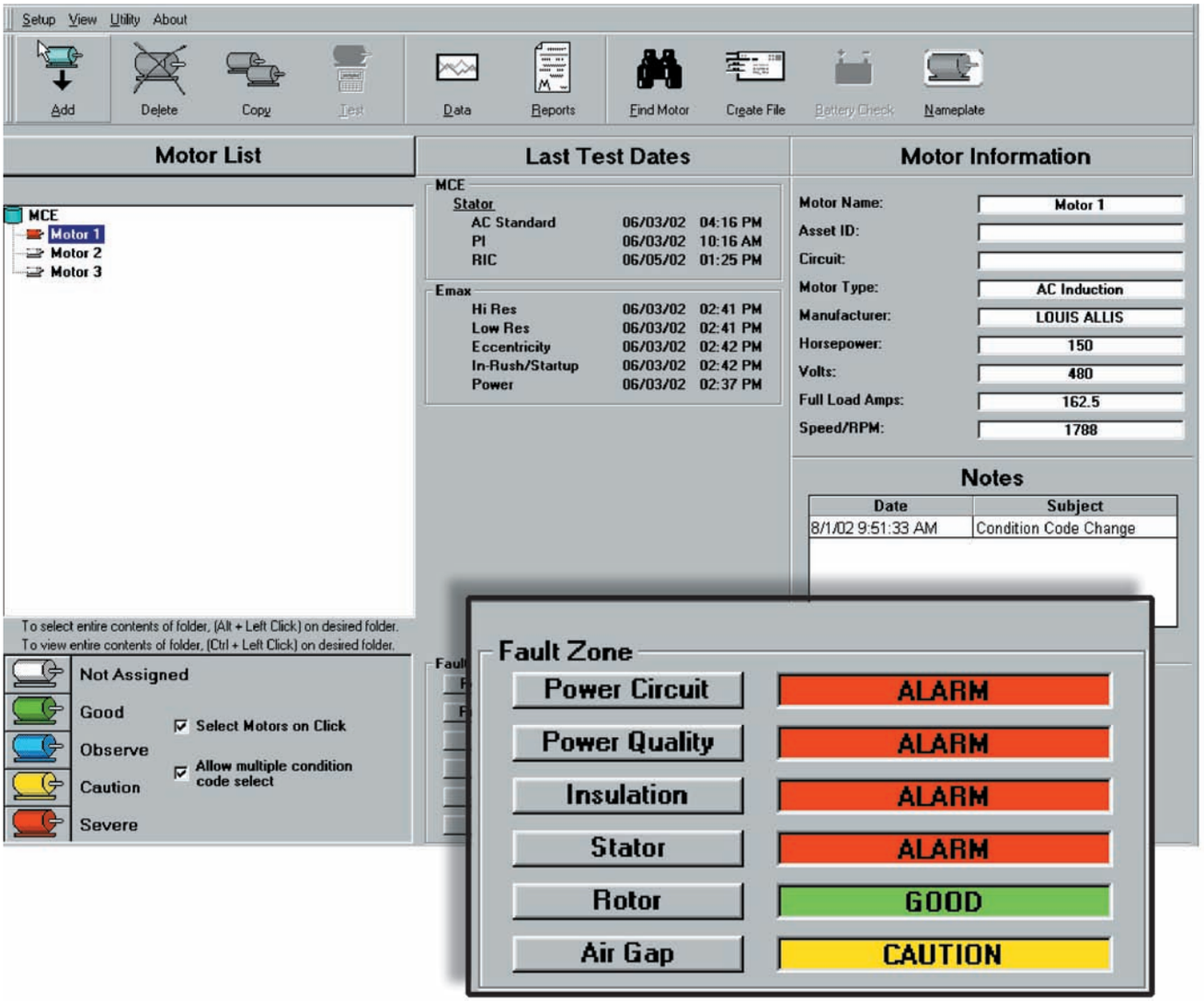
Diagnostics/Troubleshooting

Analyze data, define problems and isolate the root cause of each potential motor failure.



** 1985 EPRI/ GE Study*

Immediate COLOR CODED Evaluation



For every motor you test, our expert software immediately evaluates the data and color codes the condition of each motor fault zone.

PdMA CORPORATION

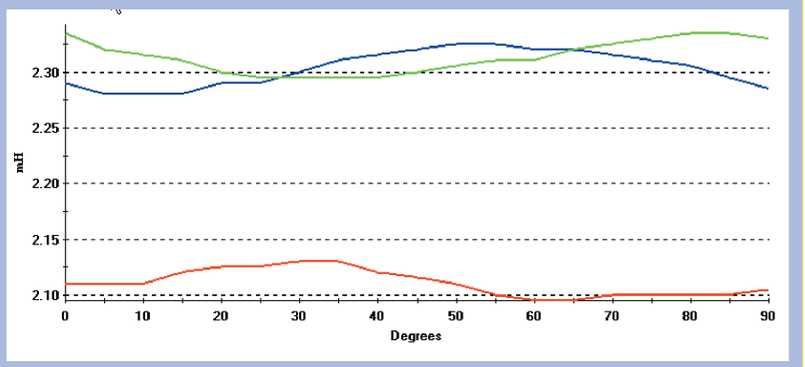
Revolutionizing Electrical Reliability

PHONE: (714) 523-3778
FAX: (714) 523-3494

www.pdma.com

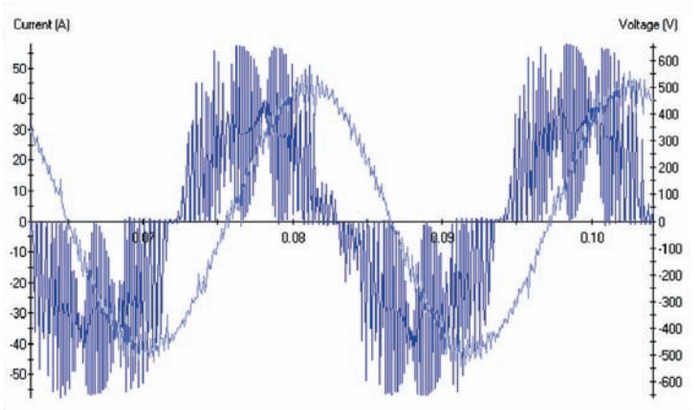
Easily Evaluate All Six Fault Zones with MCEMAX...

Stator



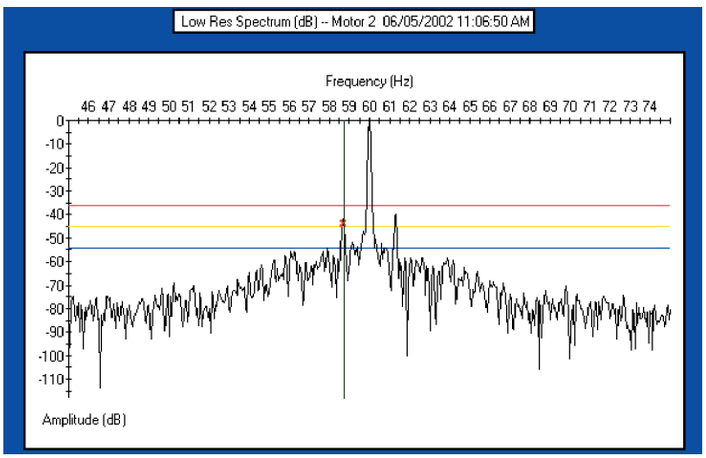
Phase-to-phase resistance, inductance, impedance and current imbalances are used to determine turn or phase shorts as well as faulty internal connections.

Power Quality



The power being fed to your motor is in reality the food it needs to operate efficiently. MCEMAX monitors three phases of voltage and current and will alert you when an unhealthy condition exists.

Rotor



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

Power Circuit

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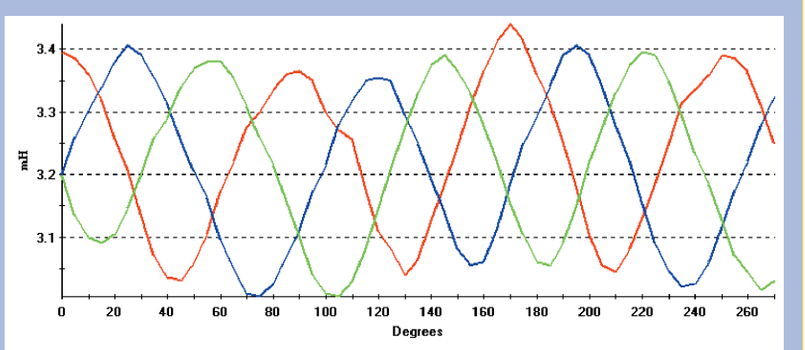
MCE #	030489HV	030489HV	030489HV
User			
Notes	No	No	No

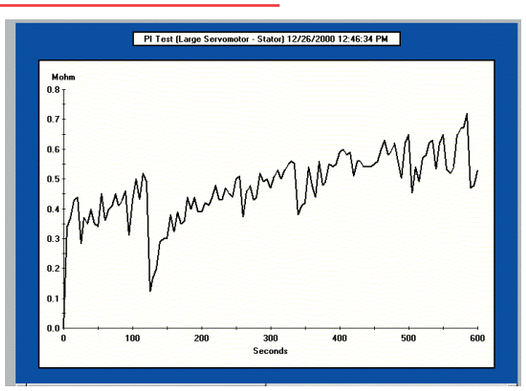
All connections, components and cables between the MCC and the motor must be resistively balanced. Potential problems occur when you introduce loose or corroded connections into the circuit. The MCEMAX compares each phase of resistance, current and voltage to ensure a perfect balance.

Air Gap



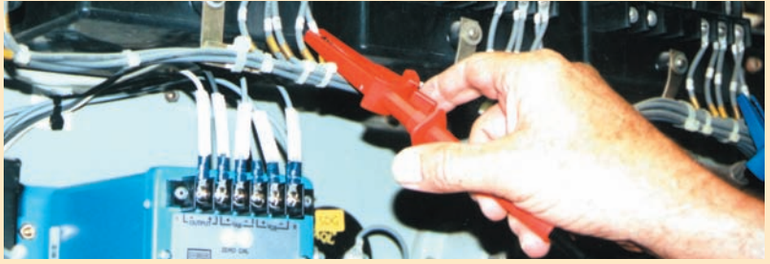
Bowed shafts, cocked end rings or degraded journal bearings create magnetic imbalances. These magnetic imbalances show up as 1st and 3rd sidebands around eccentricity frequency or as a "bow tie" shape on the RIC.

Insulation



Resistance-to-ground values for motor windings decrease as moisture and contamination increases. The MCEMAX not only provides testing capabilities up to 5000VDC** but also offers continuous graphing polarization index (PI) and computer automated step voltage tests.

***obtained with the 5kv Module*



Your Benefits:

Comprehensive

MCEMAX tests all potential fault zones: stator, rotor, air gap, power quality, power circuit and insulation.

Correlative

MCEMAX correlates both online and offline data to confirm troubleshooting efforts.

Versatile

MCEMAX tests AC induction, synchronous, wound rotor, DC, specialty motors, generators and transformers.

Unparalleled Support

Free expert technical support for the life of the unit.

Frequently Asked Questions

How long does it take for the MCEMAX to pay for itself?

Based on a recent customer survey the average length of time for the MCEMAX to fully pay for itself is 5 months. There have been no reports of ROI taking longer than one year.

Are you compliant to IEEE 43-2000 standards?

Yes. When testing motor windings rated between 2501-5000 volts you should use 1000-2500 volts. With our 5kv Module, the MCEMAX is capable of providing up to 5000 volts DC for Resistance-to-Ground, Dielectric Absorption, Step Voltage or Polarization Index testing.

Do you test VFD motors?

Yes. MCEMAX is not only the most comprehensive tool on the market to test VFD motors, it also can test transformers, generators, synchronous motors, DC motors, wound rotor motors and more.

Rely on MCEMAX for the single best motor tester.

Task	MCEMAX	MCSA	Hi-Pot	Surge	Infrared	Megger
Tests stator windings	✓			❍		
Tests squirrel cage rotor	✓	❍				
Tests power circuit	✓				❍	
Tests power quality	✓	❍				
Tests armature and synchronous rotor	✓			❍		
Tests insulation system	✓		❍	❍		❍
Identifies air gap eccentricity	✓	❍				
Provides statistical analysis	✓					
Provides quality assurance	✓		❍	❍		❍
Allows for troubleshooting	✓	❍	❍	❍	❍	❍
Ability for trending	✓	❍				❍
Powered by battery	✓	❍			❍	❍

Clearly, the MCEMAX is the most comprehensive motor tester available.

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

Aerospace:	**The Boeing Company, NASA**
Aluminum/Steel:	**ALCOA, Dofasco, Nucor Steel, USS-Posco**
Electric Utility:	**Southern Company, Ameren-UE, Reliant Energy, Entergy Operations**
Food Processing:	**Kal Kan, Cargill, General Mills**
Manufacturing:	**Eastman Kodak, Intel, Saturn, General Motors Corp., Ford Motor Co.**
Motor Repair/Service:	**Magnetech Industrial Services, Reliance Electric, Smith Services**
Petrochemical:	**Conoco, Chevron Products Co., Pemex, DynMcDermott, Syncrude Canada**
Pulp and Paper:	**International Paper, Boise Paper Solutions, Smurfit-Stone Container Corp., Georgia-Pacific Corporation**
Water/Waste Water:	**Miami Dade Water & Sewer, City of Dallas, Northeast Ohio Regional Sewer District**

PdMA ISO 9001 CERTIFIED Quality Management System

PdMA CORPORATION

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