

# EMAX

## Dynamic Motor Testing

### Portable

- Lightweight with laptop interface
- Battery powered
- Field accessible historical data

### Versatile

- Tests induction, synchronous and wound rotor motors
- Provides current, voltage, power and efficiency data

### Comprehensive

- Tests five major fault zones: power circuit, power quality, stator, rotor and air gap

### Convenient

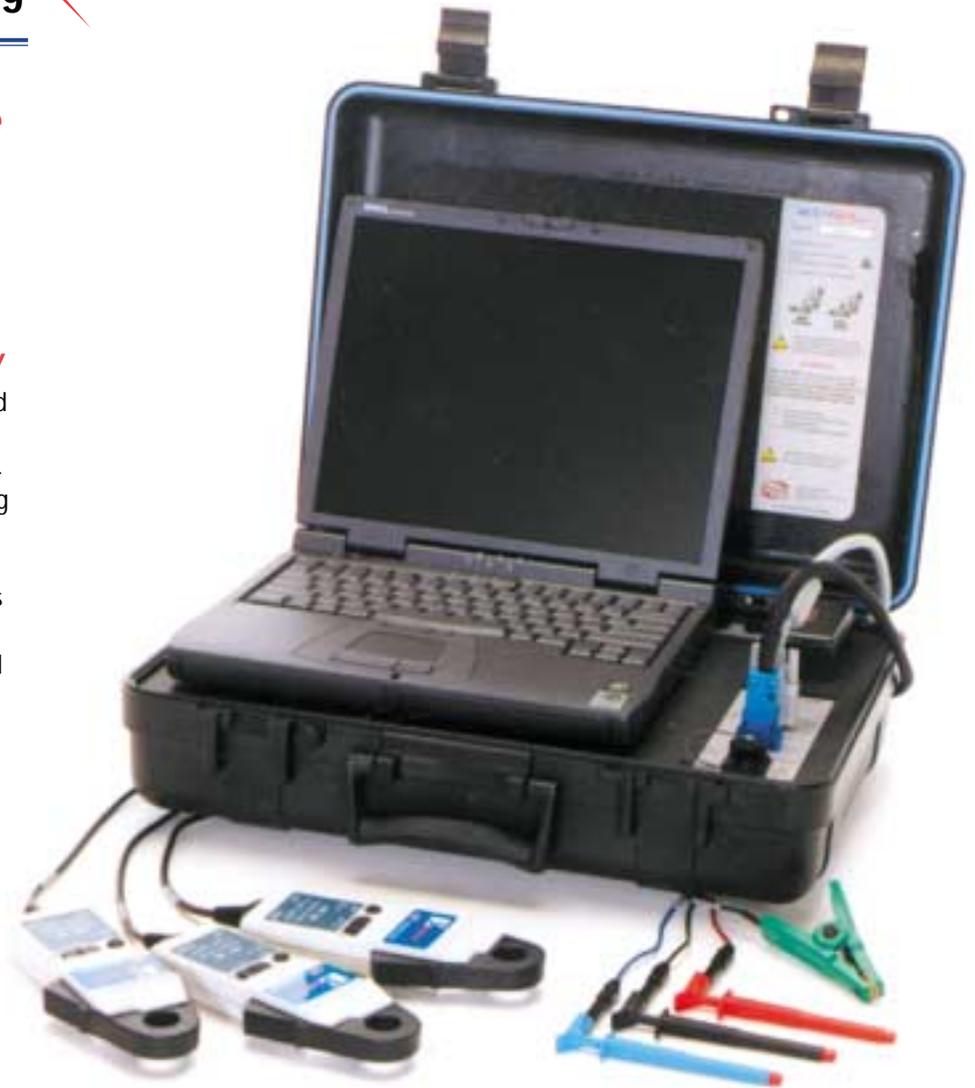
- Conducts tests while the motor is running
- Data collected from the disconnect or switchgear

### Cost-Effective

- Rapid return on investment
- Reduces unplanned downtime

### User Friendly

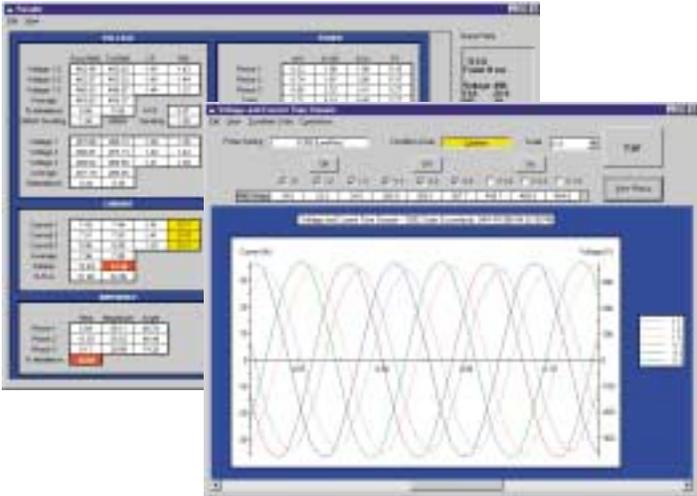
- Easy hookup and operation
- Complete graphing and reporting options
- Automated software corrections
- Free industry leading technical support



For more information on EMAX,  
call (800) 476-6463 or  
visit our website at  
[www.pdma.com](http://www.pdma.com)

## INTRODUCING EMAX:

Demands in today's industry require motors to run as often as possible. Most proactive companies want to employ predictive maintenance practices on their motors. However, this valuable act can be a double-edged sword—important to do, but often requiring the motor to be shut down for access. Finally, there is monitoring equipment available that gives you the best of both worlds. EMAX, from PdMA Corporation, is a portable dynamic tester that evaluates electrical motor condition without shutting down your process.



## POWER ANALYSIS:

The power analysis portion of the equipment provides valuable insight into incoming power quality, power circuit condition, stator health and motor efficiency. The three phase current and voltage signal is captured in just seconds and then stored for diagnostics and trending.

Power quality is diagnosed through total harmonic distortion (THD) and crest factor calculations. Distortion in the signal, often the result of nonlinear loads, produces additional heat within the motor that will reduce life if not acted upon.

The power circuit and stator fault zones are evaluated through current parameters and sequence data. Balances in the voltage, current and impedance are combined with negative and zero sequence currents to identify winding or connection problems. Unlike the positive sequence currents that produce useful torque, negative sequence currents are caused by high resistive connections within the motor or circuit and generate heat-producing counter torque. Rising negative sequence currents coupled with a high impedance and current imbalance are indicative of developing stator faults.

## CURRENT ANALYSIS:

Current analysis is performed through a combination of spectral graphs and software automation. Utilizing this portion of the equipment, the user can identify defects in the rotor and air gap fault zones and record motor startup.

Spectral current is collected in one of three ways: high resolution, low resolution or eccentricity. Each uses different sampling rates and resolutions to identify anomalies in a specific fault zone. Rotor bar defects and eccentricity, static or dynamic, can be detected and trended.

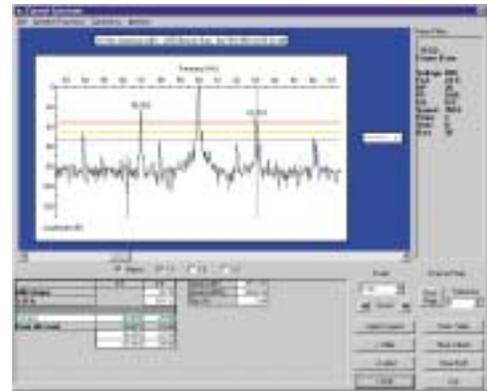
Startup, arguably the most stressful and informative time in motor operation, is recorded from start to finish. Graphing in-rush current and startup time is extremely valuable when evaluating motor operation and condition. Certain changes in the startup characteristics can be attributed to rotor or stator faults. Additionally, current profiles for operations can be recorded, trended and compared. This can be an effective method for evaluating equipment or machinery involved in plant processes.

## TRENDING & REPORTING:

Trending data is a critical element in any condition monitoring process. But, spotting motor trends is most effective if the data collected can be organized and viewed as quickly and efficiently as it's captured. EMAX generates valuable reports immediately after testing, enabling you to assess the condition of your motors in the field or trend the data for later use.

EMAX reports include a series of graphs, screen plots and historical comparisons. These reporting capabilities clearly illustrate the status of rotors, stators, power quality and other fault zones, allowing you to discover and evaluate possible problems before they result in lost productivity from forced downtime. When combined with the MCE™, the EMAX provides the most comprehensive condition analysis equipment available in a single package.

Finally, with the professionals at PdMA Corporation behind this product, you can always rely on our expertise and technical support. Call on us for assistance in maximizing your electrical reliability efforts.



## SPECIFICATIONS:

### Voltage:

Direct Testing:  
Range: Up to 600v L-L  
Accuracy\*: +/- 1.0%

Secondary:  
Range: 500v on Secondary Side  
Accuracy: +/- 1.0% + PT error

### Current:

Range: 0-3000 amps  
Accuracy: +/- 1.0%  
+/-0.3A-0.10A

Resolution:  
+/-50mA-200mA

Output Sensitivity:  
1mV/A-10mV/A

### Test Information

Direct Testing:  
Range: 0-6000 Hz

Sampling Rate:  
High - 480/second  
Low - 960/second  
Eccentricity - 12,288/second  
In-Rush Startup - 3600/second

Resolution:  
8000 lines

### Physical

Size:  
13" x 18" x 3.5"  
17 lbs.

Temperature:  
Operating: 5°C - 35°C  
Storage: -20°C - 40°C  
Humidity: 20% - 80%  
Non-condensing