

MOTOR CONDITION MONITORING MOTOR PERFORMANCE TESTING POWER QUALITY TESTING

The MotorNalysis™ software allows users to quickly and easily acquire diagnostic data, automatically generate reports/graphs and trend motor performance.

SYSTEM BENEFITS:

- Improves process uptime and profitability by reducing online motor problems
- Reduces maintenance and repair costs by identifying motor degradation prior to catastrophic failure
- Enhances maintenance program effectiveness by proactively identifying equipment that is in need of repair



DATA ACQUISITION – EASY AND RELIABLE WITH VIPER™ 20 MULTI-PURPOSE PLATFORM

Acquiring test data with MotorNalysis™ software is easy, fast, and reliable with the VIPER™ 20 system. Transducer and acquisition system information is stored in the database for quick setup.



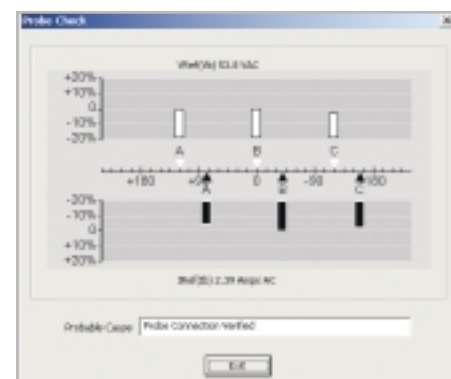
The minimum VIPER™ 20 system configuration for electric motor testing requires two modules; one to acquire motor current and voltage plus one for switches. Two spare slots can be used to acquire data from other sensors, such as accelerometers, encoders, or other sensors with a high-level output.

Optional parameters include:

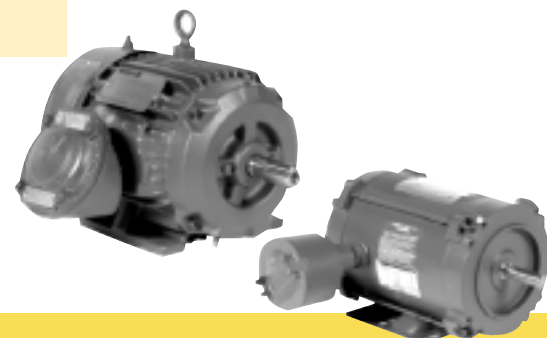
- Vibration
- Pressure
- Flow
- Temperature
- Tachometer
- Most standard industrial sensors

PROBE CHECK – VERIFIES SYSTEM SETUP

MotorNalysis™ software “Probe Check” feature verifies the status of incoming signals and alerts the technician if a probe is not functioning properly or is not properly connected to the correct phase. The technician can then correct the condition and use the feedback from Probe Check to ensure that the test data will be properly acquired.



MotorNalysis™ software Probe Check



AUTOMATED REPORTS – SAVE TIME

Coupled/Uncoupled Reports

After acquiring diagnostic test data from a running motor (either coupled or uncoupled), the newly acquired data is processed through MotorNalysis™ software algorithms. These algorithms extract important motor and power quality parameters.



MotorNalysis™ software Automated Report

Automated reports include the following motor operating parameters:

- Speed
- Slip
- Output horsepower
- Output torque
- Efficiency
- Percent of rated load

These parameters are important in determining whether the motor is operating within the proper range or if the motor is overloaded.

Power quality indicators include:

- Phase-to-phase voltages
- Phase currents
- Individual & total RMS values
- Real Power (W)
- Power factor
- Total harmonic distortion
- Crest factor
- Unbalance

Additional parameters include: Phase to Neutral Voltages, Reactive Power (VAR), Apparent Power (VA), Positive, Negative Sequence Voltage and Current, plus many more. The parameters are calculated and saved in the database. This saved data is available for trending.

MotorNalysis™ software processes the data and evaluates motor stator and rotor condition, motor performance, and power quality, and alerts the technician to conditions outside of the normal range using alarms. Alarm thresholds can be adjusted for an individual motor if needed, either to reduce spurious alarms or to increase sensitivity to certain motor performance or power quality characteristics.

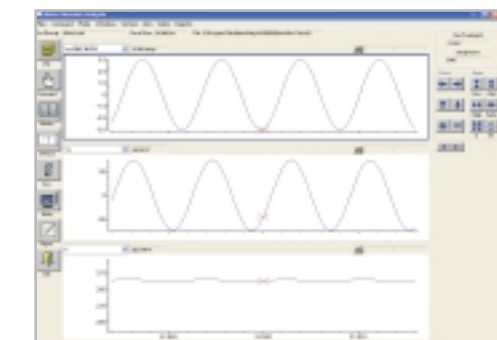
Alarms include:

- System voltage
- Motor current
- Motor loading
- Performance
- Rotor condition
- Stator condition
- Auxiliary alarms (for additional input channels such as accelerometers)

DETAILED ANALYSIS – TOOL SET FOR OTHER PARAMETERS

Analysis Plots

MotorNalysis™ software facilitates generation of custom graphs and reports such as X-Y plots, trend plots, and histograms using any of the parameters calculated by the system.



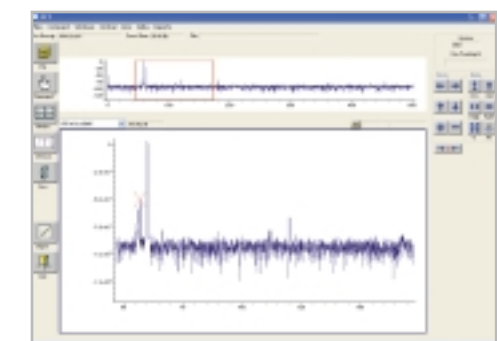
Signature Analysis (Time Domain)

Signature Analysis

When more detailed analysis is called for, MotorNalysis™ signature analysis features can be used.

These include:

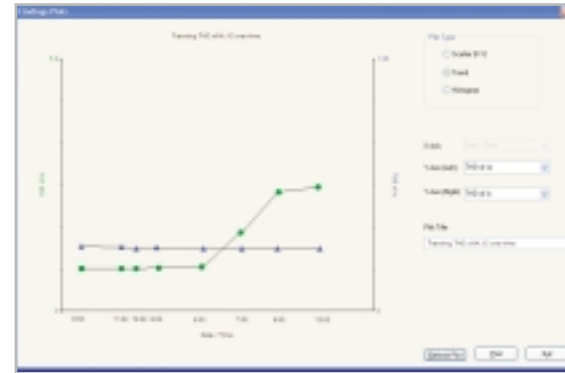
- Frequency domain analysis (FFT)
- Filtering
- Time domain analysis
- Calculated traces
- Trace overlay



Signature Analysis (Frequency Domain)

TRENDING – A PLANNED APPROACH TO MOTOR MAINTENANCE

The database and reports generated by MotorNalysis™ software provide a systematic approach to managing and planning maintenance resources by trending.



SYSTEM REQUIREMENTS

Microsoft Windows XP
CD drive
Mouse or other pointing device

SYSTEM HARDWARE

MotorNalysis™ software operates with the VIPER™ 20 Data Acquisition System, purchased separately. Data is stored and analyzed on a laptop computer or transferred to a network for analysis using a desktop workstation.



**MOTOR
EVALUATION
SOFTWARE**

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