

AS-250 SPECTRALMON™

REAL-TIME DYNAMIC MONITORING AND ANALYSIS SYSTEM

The screenshot displays the AS-250 SpectralMon software interface. At the top, a red banner indicates an **ALARM** status. Below this, a **GRAPHICAL BARMETER** shows the overall amplitude in PSI across 16 channels. To the right, a **RESULTS LIST** provides a detailed view of the alarm conditions, including the specific frequency and pressure for each peak. At the bottom, an **ALARM LOG** table records the time, date, tag, and description of each alarm event.

MACHINE STATUS
Normal or Alarm Status

GRAPHICAL BARMETER
Channel Amplitude

HISTORICAL ALARM LOG
Time, Date, Tag, and Description

RESULT TREE VIEW
Normal/Alarm Conditions, Diagnosis Results, and Criterion Values

Date and Time	Result	Tag	Description
2003-01-28 10:54:53	ALARM	HSW12	Hi freq peak combustor 12 ALARM (1.588 PSI @ 176.250 Hz)
2003-01-28 10:54:44	ALARM	HSW12	Hi freq peak combustor 12 ALARM (1.511 PSI @ 175.000 Hz)
2003-01-28 10:54:33	ALARM	HSW12	Hi freq peak combustor 12 ALARM (1.649 PSI @ 178.750 Hz)
2003-01-28 10:54:29	ALARM	HSW14	Hi freq peak combustor 14 ALARM (1.608 PSI @ 173.750 Hz)
2003-01-28 10:54:25	ALARM	HSW14	Hi freq peak combustor 14 ALARM (1.601 PSI @ 162.500 Hz)
2003-01-28 10:54:25	ALARM	HSW12	Hi freq peak combustor 12 ALARM (1.644 PSI @ 173.750 Hz)
2003-01-28 10:54:20	ALARM	HSW14	Hi freq peak combustor 14 ALARM (1.506 PSI @ 165.000 Hz)
2003-01-28 10:54:12	ALARM	HSW12	Hi freq peak combustor 12 ALARM (1.691 PSI @ 176.250 Hz)
2003-01-28 10:54:06	ALARM	HSW12	Hi freq peak combustor 12 ALARM (1.963 PSI @ 177.500 Hz)
2003-01-28 10:54:04	ALARM	HSW12	Hi freq peak combustor 12 ALARM (1.769 PSI @ 176.250 Hz)
2003-01-28 10:54:03	ALARM	HSW12	Hi freq peak combustor 12 ALARM (1.532 PSI @ 177.500 Hz)
2003-01-28 10:54:01	ALARM	HSW14	Hi freq peak combustor 14 ALARM (1.506 PSI @ 178.750 Hz)
2003-01-28 10:53:55	ALARM	HSW12	Hi freq peak combustor 12 ALARM (1.554 PSI @ 180.000 Hz)

In many industrial applications, there is a need to monitor the dynamic characteristics of large machinery (such as turbines and compressors) or processes (such as steel and paper production).

To meet this need, Alta Solutions has designed **SpectralMon™** to provide round-the-clock dynamic monitoring. It uses powerful spectral and time analyses to detect changes in the dynamic signature of your machinery or process.

The system has a rich set of alarm criteria to catch a wide range of problems. User-defined and rpm-based energy bands and spectrum windows can be configured to identify the presence of significant frequencies. Time thresholds and statistical criteria detect spikes and changes in the time waveform.

Once a dynamic event is detected, the system instantly informs the control system or other external devices. This information can be used to alert the operator to change process settings or schedule maintenance.

The system provides a detailed historical log of the events to help correlate changes in the process or deterioration in the machinery.

Sensors including accelerometers, velometers, proximity probes, displacement sensors, pressure transducers, and microphones can easily be connected to the **SpectralMon™** system. Flexible signal conditioning provides anti-alias filtering, overload protection, AC/DC coupling and IEPE transducer power.

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REAL-TIME DATA DISPLAY

SPECTRUM PLOT
Live, Average, Peakhold
Integration/
Differentiation

TIME PLOT
Time Signature

ADVANCED CRITERIA
Hilbert Envelope,
Sound Pressure
Level, Speed, and
Wavelet

SPECTRUM CRITERIA
Overall Amplitude,
Window, Energy Band,
Phase, Total Harmonic
Distortion, and Spectral
Envelope

DATA MARKERS
Peak, Harmonic,
Sideband, Order,
Delta Frequency, Delta Time,
and User Defined

TIME CRITERIA
Threshold, Trigger,
Crossing, and Crest
Factor

STATISTICAL CRITERIA
Mean, Sigma, Skew,
and Kurtosis

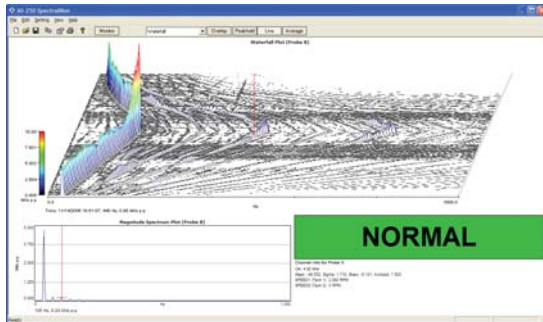
Results List

- Unbalance
 - Order Window Normal (0.1674 G rms, 1.0 order)
- Time Based
 - Crest Factor ALARM (3.066)
 - Kurtosis ALARM (2.904)
- Speed
 - Speed ALARM (5,710 RPM)

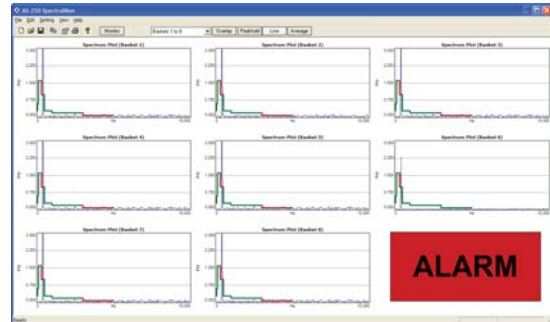
ALARM

Information for Fwd Frame
DA: 1.94 G
Mean: 0.002, Sigma: 1.278, Skew: 0.203, Kurtosis: 2.904
SPEED1 (Tach 1) 5710 RPM

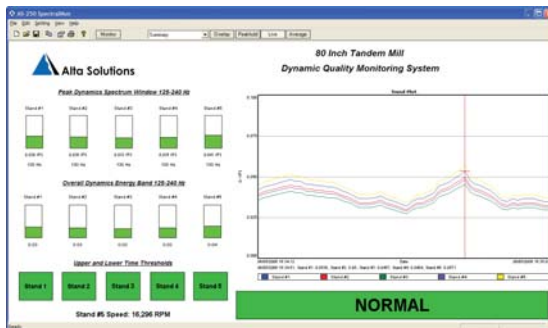
WATERFALL



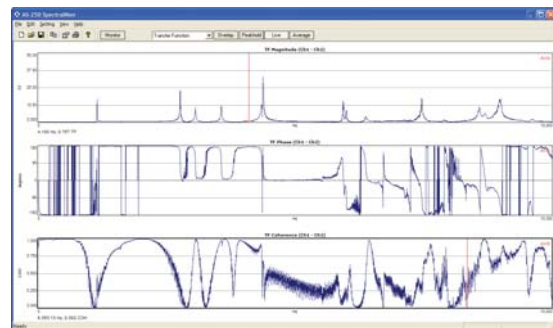
MULTI-CHANNEL



TREND



TRANSFER FUNCTION



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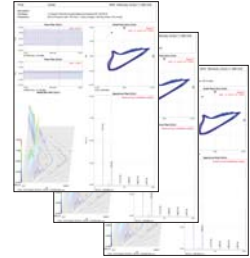
SENSOR SIGNALS

Accelerometers, Proximity Probes, Vibrometers, Pressure Transducers, Velocity Probes, and Tachometers



PROCESS DATA

PLC and DCS via Network Sockets, Digital Inputs, Ethernet, and RS-232



REPORT GENERATION AND DATA OUTPUT

Alarm Summary, HTML Reports, E-mail, Spreadsheets, Time and Spectrum Snapshots, Digital Recording, Data Trending, RA Emonitor Modbus RTU/TCP, OSI PI Interface, and SQL Database



OUTPUT DEVICES

Electromechanical Relays, PLC and DCS, Ethernet, RS-232, and Printers



DATA EXPORT

ASCII, Mathwork's Matlab, WAV, SQL, Vibrant's MEScope, and UFF (Universal File Format)

Contact Alta Solutions for the latest specifications and ordering information.



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