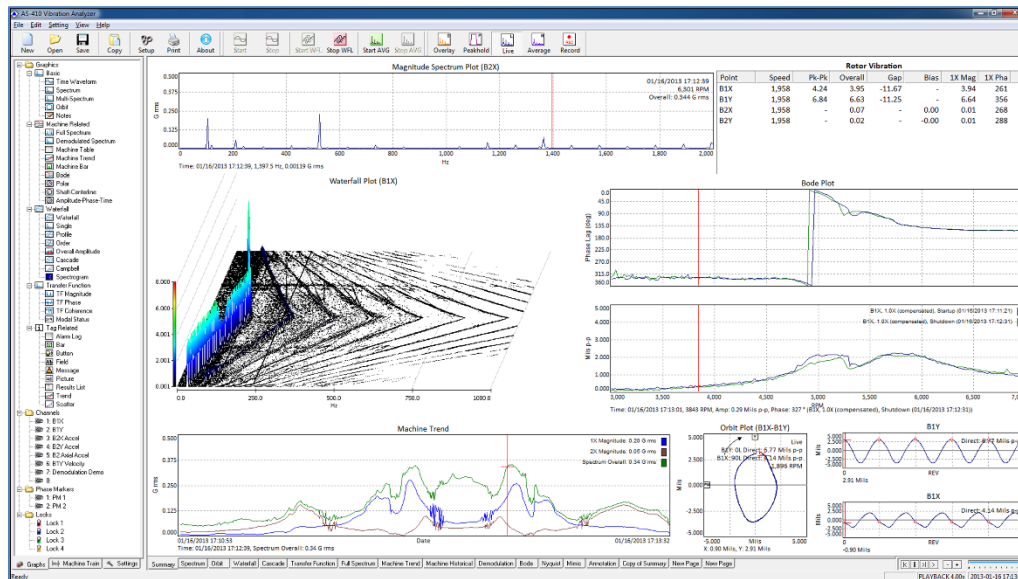# AS-410 Datasheet

Real-time Vibration Analyzer Software

POWERFUL AND VERSATILE ANALYSIS TOOL

The AS-410 Vibration Analyzer software merges the best features of a real-time machinery analyzer, dynamic signal analyzer, transient capture device, modal capture tool, and digital recorder into one powerful package.

REAL-TIME DATA CAPTURE AND ANALYSIS

The AS-410 captures, analyzes, presents, and stores the real-time data from the Alta Solutions hardware platforms.

DIGITAL RECORDING AND PLAYBACK

The AS-410 has the ability to record data to a hard drive based on events or defined intervals. It maintains a large data buffer, which allows storage of pre-triggered data before an event. This data can be played back and analyzed off-site. The AS-410 can change the analysis parameters (spectral lines, overlap, etc.) during playback avoiding potential travel to re-record the data.

ALARMING CRITERIA

The AS-410 has the powerful capability to act as a monitoring system, and has over 50 analysis criteria built-in. This feature allows the users to extract the different machinery features from the dynamic data. These criteria can be used to trigger data capture and alert the operator.

CORRELATE WITH EXTERNAL PROCESS DATA

For machinery diagnostics, it is important to understand the operating conditions of the machine under test. The AS-410 allows external process data (pressures, temperatures, flows, load, etc.) to be correlated with real-time dynamic data.

INTUITIVE USER INTERFACE

The AS-410 has a very intuitive user interface in which a user can quickly open plots, change channels, and modify settings by simply dragging and dropping the different screen elements. The software also allows vibration analysts to quickly navigate and visualize collected data.

RICH SET OF DISPLAYS

The AS-410 has a rich set of available graphical representations of collected data, including time, spectrum, orbits, waterfall (cascade, profile, order), transient/vector (Bode, Nyquist, shaft centerline), transfer functions (magnitude, phase, coherence), trends, scatter, and HMI screen elements (alarm logs, bars, field values, tables, mimics, script buttons).

DATA REPORTING FEATURES

The AS-410 has many features to allow the user to quickly annotate and document their analysis. Locking cursors allow the user to correlate and analyze data across multiple pages. Each graphical plot or table can be quickly copied into a word processor or spreadsheet for final report presentation.

Analysis Parameters

Data Analysis

Live, Average, Waterfall

Math Operations

Integration, Differentiation

Spectral Resolution (lines)

100, 200, 400, 800, 1600, 3200, 6400, and 12800

Window Functions

Rectangular
Hamming
Hanning
Blackman-Harris
Flat-top
Exponential

Overlap Processing

0%, 25%, 50%, 75%, and 90%

Data Triggering

Freerun, Channel, Delta RPM

Trending

Any analog or process variable

Averaging Types

Linear, Exponential

Averaging Ensembles

1 to 1000

Vector Trigger Types

Free-Run, Delta RPM

Waterfall Storage

Time, Spectrum, Synthetic Tachometer

Waterfall Records

10 to 500

Waterfall Stop Condition

When Full, Continuous

Data Visualization

Plot Types

Spectrum

Magnitude
Phase
Real
Imaginary
Full Spectrum
Demodulated

Time Multi Power Spectral Density

Waveform
Orbit
Trend
Scatter

Waterfall

Cascade
Single
Spectrogram
Profile
Order
Overall Amplitude
Campbell

Machine Related

Bode
Polar (Nyquist)
Shaft Centerline
Machine Table
Amplitude-Phase Time (APH7)
Machine Trend

Transfer Function

Magnitude
Phase
Coherence
Real
Imaginary

Other

Mimic (Picture)
Bar
Alarm Log
Field
Script (Buttons)
Notes

Cursor Features

Select Data with Mouse/Keyboard
Tracking Cursor (Spectrum)
Numerical Cursor Readout
Multi-Plot Cursor Locking

Data Markers

Peak
Harmonic
Sideband
Order
Delta Time
Delta Frequency
User Defined

Analysis Criteria

Spectrum

Overall Amplitude
Spectrum Window
Order Window
Spectrum Envelope
Energy Band
Order Band
Phase
Order Phase
Total Harmonic Distortion

Time

Time Level Threshold
Overall Amplitude (peak to peak)
Time Signature
Pulse Width
Time Trigger
Time Crossings
Crest Factor
K Factor
Form Factor

Vector

Gap Voltage
Not 1X
SMax

Statistical

Mean
Standard Deviation (sigma)
Skew
Kurtosis

Modal

Damping (Q)
Resonant Frequency
Transfer Function Window
TF Magnitude
TF Phase
Hammer Hits

Other

Hilbert Envelope
Speed
Delta RPM
Sound Pressure Level (SPL)

Digital Recording (FIFO)

Speed

Data streaming (all channels)

Controls

Playback
Pause
Step Forward
Step
Backward
Slider Position

Playback Speed

1/4x to 4x speed

Triggering

Manual or On Event

Pre-Trigger Samples

400,000 per channel

External Interfaces

Data Input

        Digital Inputs
        Modbus (Master and Slave)
        User Defined Tags

Data Output

        Electromechanical Relays
        Alarm (Event) Logging
        Time/Spectrum Logging
        Digital Recording (FIFO)
        Spreadsheet (Comma-Delimited)
        HTML Report
        E-Mail
        TCP/IP Socket Protocol
        Modbus (Master and Slave)
        OSI PI Historian
        Rockwell Automation EMonitor
        GE Proficy

Data Export Formats

        ASCII - Comma-Delimited
        Matlab (Mathworks)
        MEScope (Vibrant Technology)
        WAV
        UFF (Universal File Format)

Operating System

        Windows 10 (Recommended)
        Windows 8
        Windows Server 2012 or newer
            (2016 Recommended)
        Windows 7/XP/2008/2003
            (Not Recommended)

PC Specifications (Recommended)

        Processor - AMD Ryzen or Intel I3.
            (Ryzen R5 or Intel I5)
        RAM - 4GB (8GB)
        Video Card - 256 MB (1 GB)
        Disk Storage Space - 65 MB App, >300gb
            Data, Desktop HDD.
            (>500GB SSD)
        Video Display - 1024x768 (1920x1080)

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