



Model 6310/PA

Reciprocating Machinery Performance Analyzer

Key Features at a Glance

- On-machine Analysis collecting and displaying real-time data
- Large Mass Data Storage for performance data and reports on the analyzer
- 4-Channel Data Acquisition plus Encoder Channel
- Wireless Encoder and Once-per-turn Inputs
- Historical Data Recall and Graphical Overlays
- High Resolution Color Screen
- Lightweight (6.75 lbs)
- Compact (10.5" x 8.5" x 2" deep)
- Easy-to-use Menu-driven Interface
- Upgradeable Design

What's New

- Proprietary "Leak Index" for automated compressor diagnostics
- Velocity sensor for low frequency vibration measurements
- Enhanced backlight/color display for outdoor viewing

6310/PA

Utilizing Windrock's experience in portable data collectors, miniaturization, and digital signal processing, the 6310/PA boosts productivity and effectiveness by providing the user with the most comprehensive "on machine" analysis capability in the industry. The 6310/PA combines a four-channel, lightweight, battery operated data collector with a powerful, on-board processor, FIFO memory, and internal mass storage. This allows the user virtual "real-time" display and capture of up to four channels of data simultaneously and the ability to recall historical and baseline data from memory. The large, color, backlit, high-resolution LCD provides the capability to overlay plots for comparison analysis and trending. The 6310/PA also calculates performance parameters such as IHP, valve losses, clearances, rod load, capacity, and much more. With extensive spectrum vibration capabilities, the user can perform four-channel (four-channel /VA transient option available) time waveform and FFT analysis on rotating machinery. Discover how the 6310/PA can improve the performance, mechanical condition, and reliability of your reciprocating engines and compressors.

Data Acquisition

- 4-Channel simultaneous data acquisition plus encoder or once-per-turn input
- 20 Hz to 20 KHz sampling rate
- Wireless encoder and once-per-turn

The 6310/PA's fast processor allows for real-time data while on the machine.

Real-Time "On Machine"

- Pressure vs. Crank Angle
- Vibration vs. Crank Angle
- Ultrasonic vs. Crank Angle
- Spark Voltage vs. Crank Angle
- Detailed "Scope-like" Ignition Trace
- Pressure vs. Volume
- Log Pressure vs. Log Volume
- Historical Data Recall
- Graphical Overlay Plots
- Theoretical Overlay Plots
- Ignition Performance Reports and Calculations
- Engine Performance Reports and Calculations
- Compressor Performance Reports and Calculations
- Non-encoder Peak Pressure Balancer Mode
- Automated Secondary Ignition Survey Mode
- Vibration vs. Time
- FFT of Vibration / FFT Averaging
- Time Synchronous Averaging
- Time Waveform
- O-scope Mode
- Optional 4-channel Transient Analysis

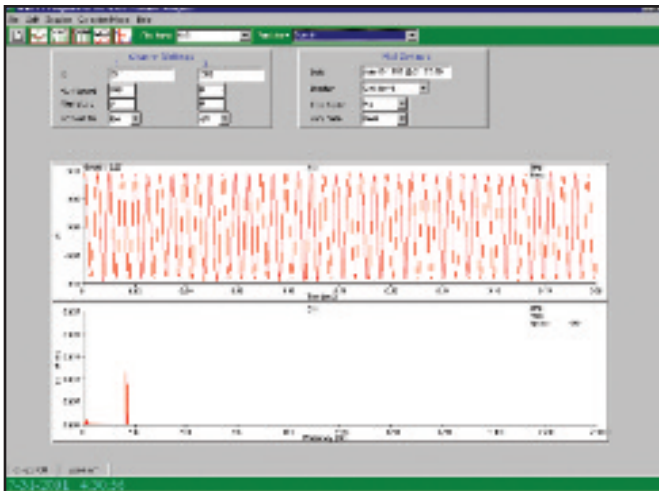


Engine

- Ignition System Deficiencies
- Peak Firing Pressure Imbalance
- Defective Fuel Injection Valves
- Leaking Valves and Rings
- Worn or Scored Liners
- Intake / Exhaust Port or Bridge Wear
- Worn or Defective Valve Train Components
- Damaged Connecting Rod and Wrist Pins
- Damaged Bearings
- Turbocharger Defects
- Jacket Water and Lube Oil Pump Faults
- Excessive Frame Vibration
- Foundation or Grout Damage
- Horsepower Discrepancies
- Poor Fuel Consumption Factors
- Excessive Exhaust Emission Factors

Compressor

- Mechanical Looseness
 - Piston and Nut
 - Cross Head
 - Pin and Bushing
- Leaking Valves and Rings
- Cylinder and Piping Pulsations
- Passage Flow Restrictions
- Defective Unloaders
- Excessive Rod Loading
- Inadequate Rod Reversal
- Defective Rider Bands and Liner Wear
- Excessive Valve Losses and Deficiencies
- Clearance Discrepancies
- Horsepower and Capacity Variances



Win6310/PA Timebase/FFT Plot



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Applications

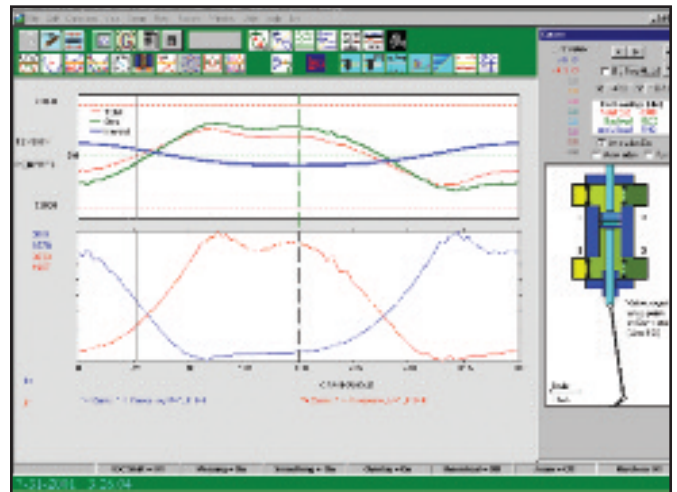
- Engine-driven Compressors
- Motor-driven Compressors
- Diesel-driven Generators and Pumps
- Spark-ignited Engines
- Diesel Engines in Locomotive and Marine Industries
- Rotating Auxiliary Components

Windows Software

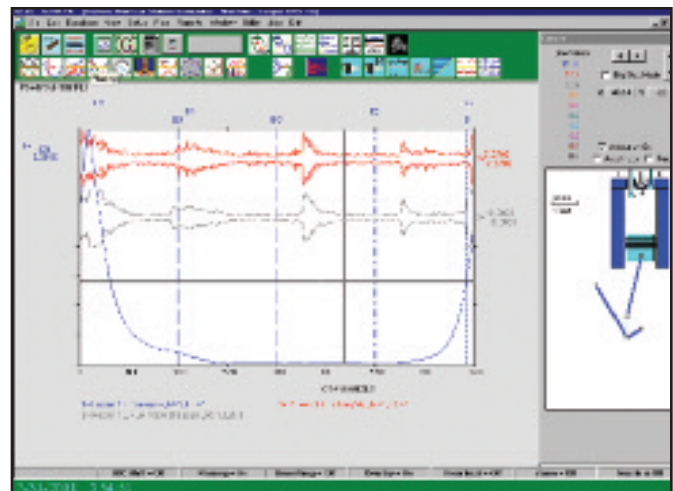
Windows-based software is provided to easily setup the machinery database for data storage, historical archiving, and trending. Comprehensive statistical reports with graphical displays are accessible on the analyzer.

Database Management

- Accommodates up to 200 Stations
- Include up to 200 Machines per Station
- Win6310/PA Windows software allows easy machine duplication and sharing via e-mail



Win6310/PA Compressor Rod Load Plot



Win6310/PA Power Cylinder Plot