

# Portable Vibration Analyzer

The DSP Logger Expert is a data collector, 6 channel, FFT Analyzer made for Predictive Maintenance and machine diagnostics. The instrument can measure, process, show and store a wide variety of analysis modes. It can work as standalone or you can download the measurements your PC via its software. Customers in Latin America already have been relying on the cost/benefit relationship of these units for over 30 years, as well as 700 units of its predecessor, the DSP Logger MX300. This new unit has a 640 x 480 resolution screen, 5" color display and High Contrast, to better handle direct sun light, It also has a sturdy keyboard with easy to find keys and four dedicated function keys in each mode of operation. Now you can measure spectrum from 400 up to 25,600 lines and wave forms from 512 up to 16,384 samples; capturing acceleration, velocity, displacement and envelope, both AC and DC.

- [Specifications & Features](#)

# Specifications & Features

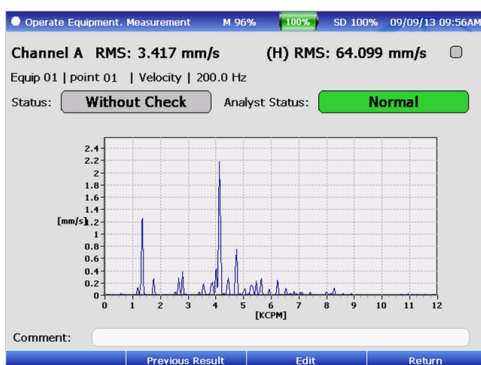
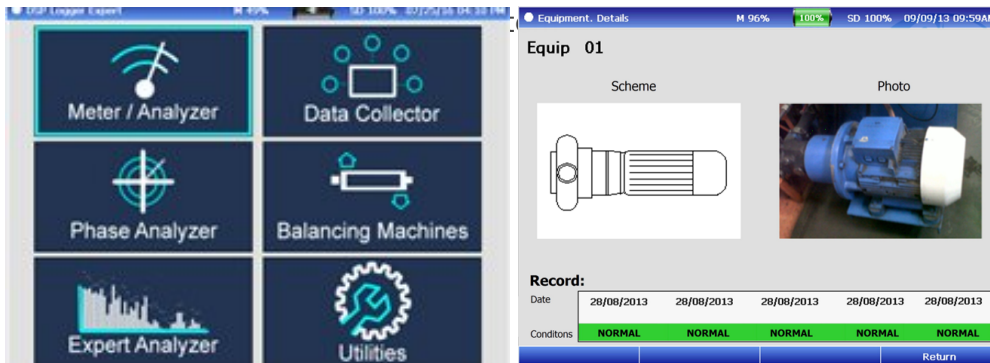
Data Collector is a six channel, route-enabled instrument that provides everything you need for cost-effective data collection and analysis. It enables maintenance professionals to easily take recordings with up to 25,400 lines of resolution and over 95 dB dynamic range.



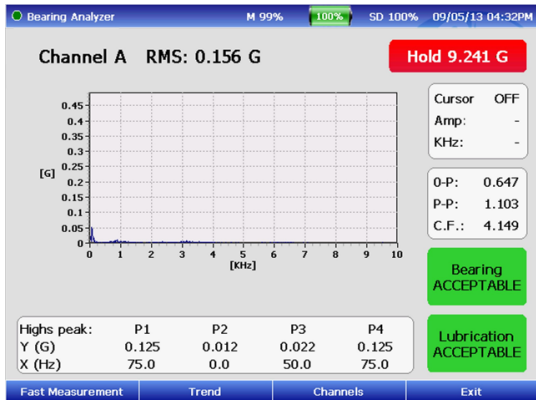
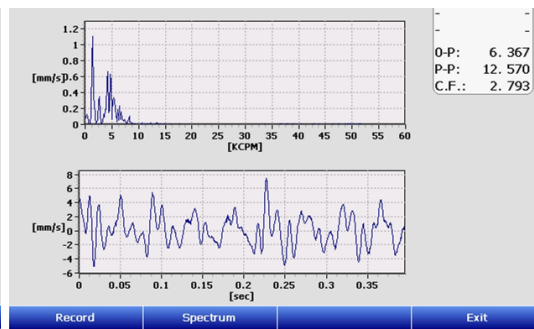
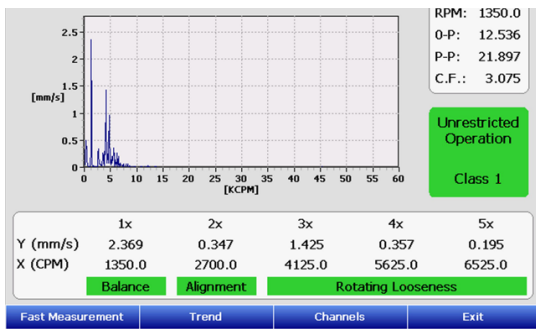
## Key features:

- 6 channels recordings
- Up to 25,400 lines FFT resolution
- 20 kHz Fmax
- 8 GB memory - Virtually unlimited spectra storage
- Spectrum and Waveform recordings
- Cable Test mode

- Wi-Fi support
- Multi-location polling
- Route-equipment-point-measurement
- Route visualization tools
- Route regeneration of unmeasured points
- Route history, including last 5 captures
- Mechanical status tools
- Equipment diagram
- Equipment pictures
- Automated function: quick or detailed
- Alarm system in spectrum or scalar



## Vibration Meter and Analyzer



## Bearing Measurement

- Bearing Condition
- Lubrication
- High Peaks
- Trending

## Spike Energy®

- Amplitude by failure frequencies
- Spike Energy® State
- Trend

## ISO 10816 Measurement

- ISO 10816 Status
- Balancing Status
- Alignment Status
- Looseness Status
- Trend

## Dual Channel

- Bearing Condition

- Mechanical, ISO Condition
- Dual channel recording Function

## Preconfigured Spectral Measurement

- Velocity
- Displacement
- Acceleration
- Envelope

## Configurable Spectrum Measurements

- With Accelerometers
- With proximiters
- With Velocimeters
- AC

## Triaxial Spectral Measurements

## Dual Channel Scalar Measurements

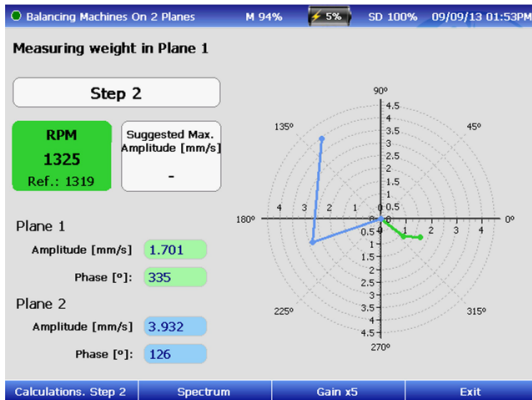
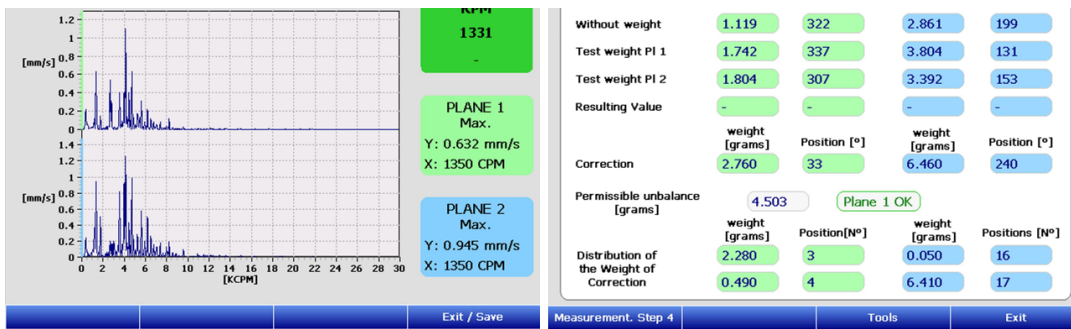
## Scalar Multi-variable Measurement

## Tachometer RPM Measurement

## Mechanical Status Tools

- ISO 10816 Status, Balancing Status
- Alignment Status, Looseness Status

# Balancer

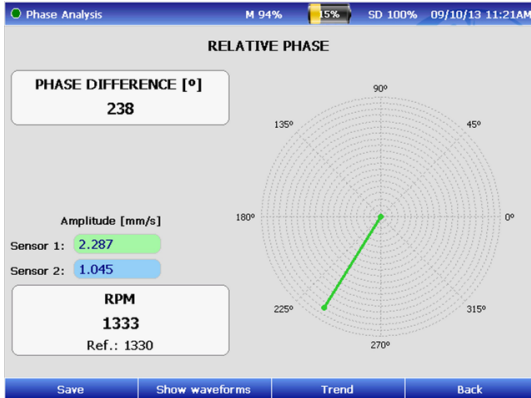
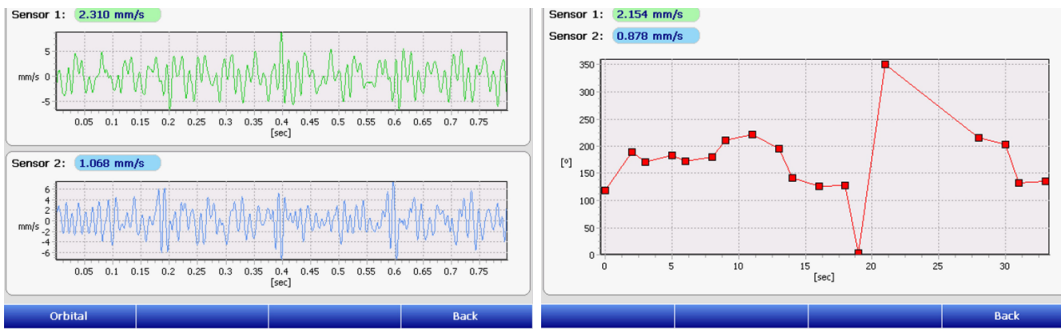


The dual-channel Balancer unbalance correction instrument is lightweight, making this instrument easy to carry on site to any problem machine. Unbalance causes high levels of mechanical stress and vibration. This is transferred directly to the bearings, resulting in a proportional reduction in normal bearing life.

With a few basic parameters, Balancer calculates acceptable unbalance levels to ensure machinery operates within international ISO 1940 guidelines.

- Single Plane Balancing
- Dual Plane Balancing
- No-Phase Balancing
- Dual Channel spectrum
- Calculations to add or subtract weight
- Final Correction Report
- Report Generator

## Vibration Phase Analysis



The phase analysis function only requires some parameters, the equipment name and estimated RPM. With this data, the system tunes the filters needed to perform phase analysis. The application screen clearly shows the RPM of the equipment analyzed in real time. The vibrational values of each point in RPM speed and 0-Peak, also include a polar plot indicating the position of the measured phase.

Relative Phase Measurement

Absolute Phase Measurement

Samples to measure and position sensors

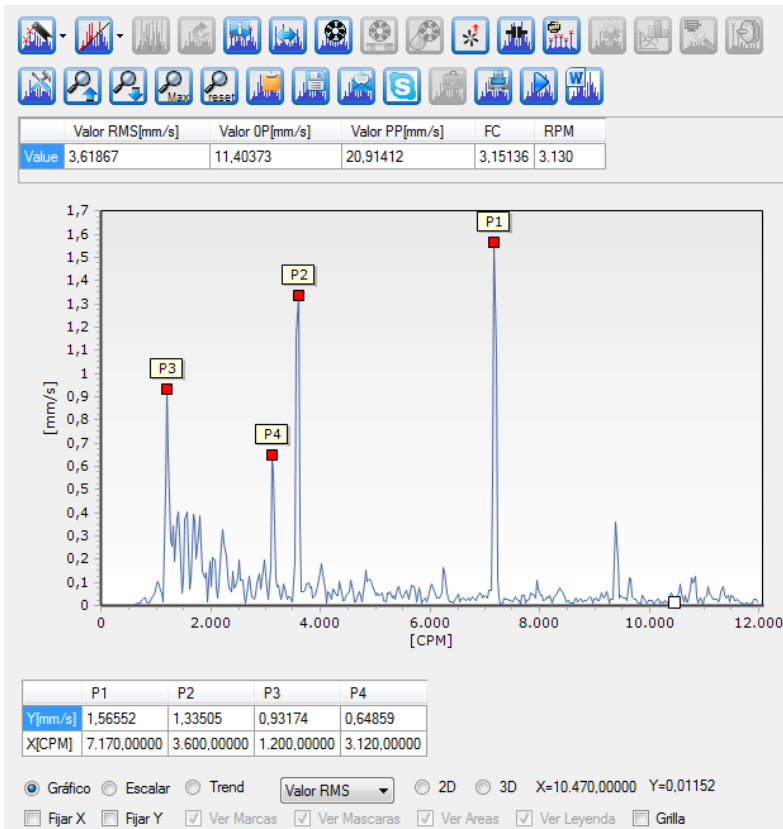
Includes:

- Polar Graph
- Phase Trend
- Dual Channel WaveForm

# Control and Analysis Software







DSP Machinery Control software is designed for the organization and visualization of remote measurements delivered by remote monitoring WRM equipment and DSP Logger Expert Data collector. Measurement system thresholds, parameters and detailed analysis of results will be easily operated from this software.

#### Tools for Analysis:

- Amplitude and frequency of a component.
- Highest peak locator.
- Harmonics locator.
- Bands locator.
- Frequencies of bearing failure.
- Harmonic frequencies of bearing failure.
- Configuration of tools and thresholds.
- Recording of spectrum as a JPG image file.
- Spectrum browsing based on dates.
- Alarm mask configuration based on historical spectra.
- Frequency and amplitude measurement unit converter.
- Automatic marker for characteristic failure frequencies.
- Automatic marker for gear frequencies.
- Automatic marker for belt frequencies.

Points can be configured, and standard and special measurements, and measurement samplings can be defined in case they are not configured as a monitoring routine procedure.

The multiple setting and point control tools allow the user to have full access to every variable that

needs to be measured in order to isolate any failure the monitored equipment may be presenting.

The system delivers all tools for an operator at the control console to visualize the general status of vibrations on a critical machine and, at the same time, for an analyst to be able to diagnose based on the interpretation of vibrating signals using spectra, waveforms, and analysis tools.

# Technical Specifications

**Input channels:** Six

**Input sources:** Acceleration, AC/DC sensors

**Amplitude accuracy:** 1%

**Resolution:** Programmable: 400, 800, 1600, 3200, 6400, or 25600 lines

**Measurement windows:** Hanning, Flat top, Rectangular

Preprocessing gSE and ESP enveloping (demodulator) with four selectable input filters for enhanced bearing and gear mesh fault detection

**Digital Integration:** Velocity and Displacement, with high-pass filters

**Programmable 1%, 5% and 10% of Fmax filters:**

- 1.25 to 2.5KHz
- 2.5KHz to 5KHz
- 5KHz to 10KHz

**Frequency range:** 0.2Hz to 20,000Hz

**Low-frequency cutoff:** 0.18Hz to 70Hz

USB Communication with SMP ActiveSync

Wi-Fi (optional)

**Micro SD:** 8GB

**Trigger modes:** Trigger: External or Laser Tach

**Trigger Level:** Fixed or Automatic

**External Trigger Slope:** Amplitude and Slope

Data Displays six-channel spectrum, six-channel time, phase table, orbit, process, cross channel phase, dual spectrum, time plots, and two tri-axial plots

**Averaging Programmable:** 1 to 4096

Spectral, synchronous time, peak hold, and continuous

**Display:** LCD, backlit color

VGA (640 x 480) 5.7 " viewable area

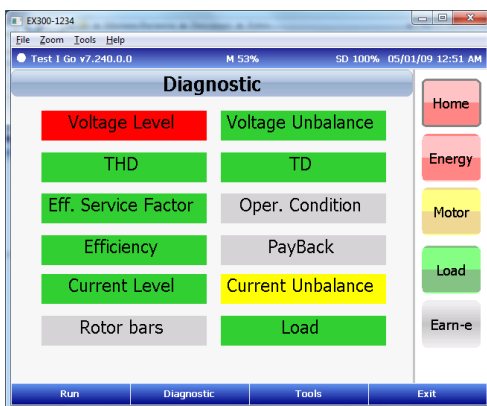
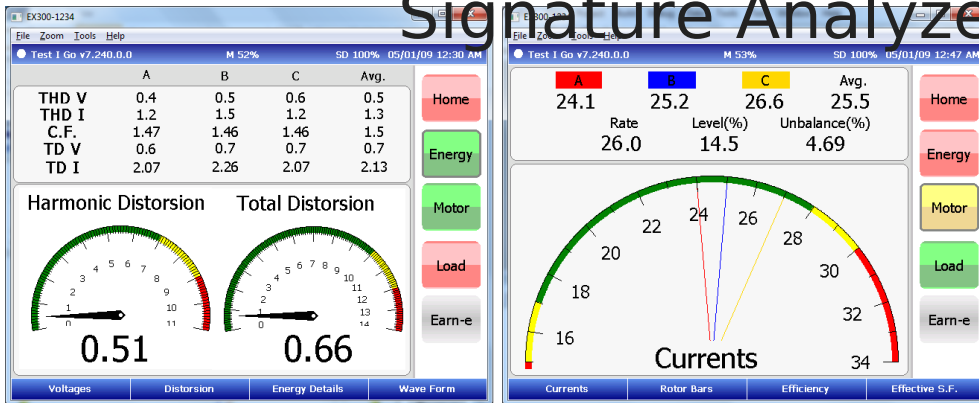
**Casing:** IP 65/DIN EN 60529 Aluminum

**Input connectors:**

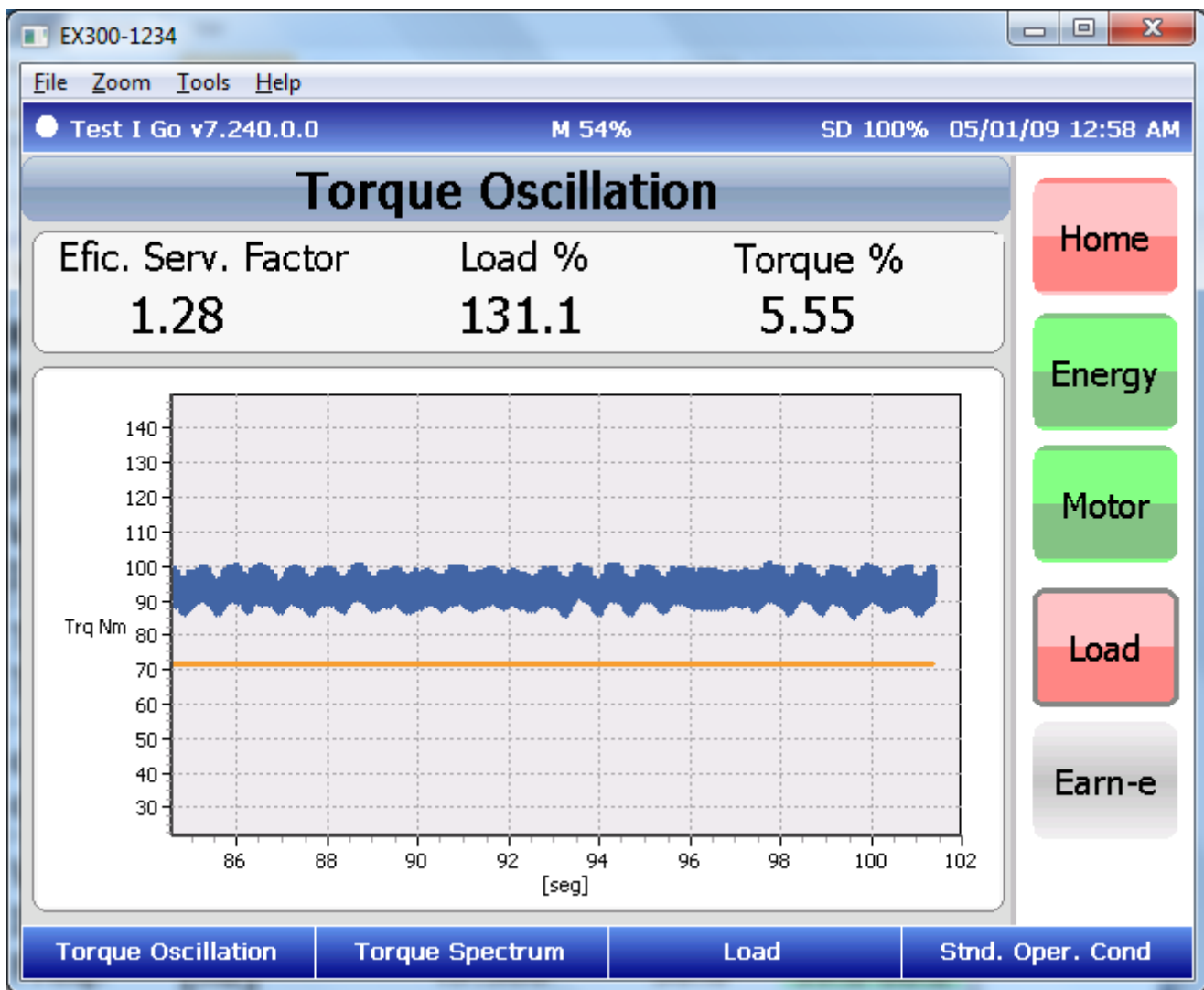
- Connector A and Connector B are 5-pin AMPHENOL
- Connector A: Channel 1, 3 and 5
- Connector B: Channel 2, 4 and 6

- Microprocessor Nvidia DUAL CORE 1Ghz
- DSP processor Analog Devices
- Battery: Rechargeable lithium ion
- Weight, approx. 715 g (1.52 lb)

## OPTIONAL: “Test I Go” Motor Current Signature Analyzer



The Motor Current Signature Analysis (MCSA) “Test I go” performs functions for predictive maintenance programs. It identifies possible power circuit problems that degrade motor health, examines overall motor power conditions, monitors the load and observes motor performance plus estimating energy savings.



It is programmed to supply information on:

- Three phase voltage levels
- Voltage balance
- Harmonic distortion
- Rotor cage condition
- Motor efficiency
- Effective service factor
- Over-current
- Power factor correction
- Torque
- Load

Once testing is complete (ex.: 30 seconds), you can save and store results for each individual electric motor.

This is the only tool in the world capable of performing, also, a sophisticated; full 6 Channels Mechanical Vibration Analysis. This avoids having to purchase two testers to perform Predictive Maintenance for Industries with small number of motors, or, allows to buy a single platform unit to integrate both mechanical and electrical analysis, for large industrial facilities with lots of

electric motors.