

VIBRATION MEASUREMENT SYSTEM ESSENTIAL FOR MANY INDUSTRIES

DELPHIN TECHNOLOGY SOLUTION FOR MEASUREMENT AND ANALYSIS

If you need to know how your products react to vibrations or operate a shaker test stand you'll need a vibration measurement system to acquire and evaluate data. While many vibration test systems require multiple devices each with their own software, [Delphin Technology](#) offers the Expert Vibro Data Acquisition and Control System as an all-in-one vibration data acquisition and control solution.

Vibration test stands are used for engines, transmissions and compressors for diagnostics and quality assurance. Vibration concerns can be present in exotic applications for jet engine turbine testing to everyday items like washing machine design validation so it is critical across many industries.



VIBRATION TEST STANDS

Many vibration tests are conducted during the development phase of the product life cycle. Operators fix test samples to shakers where they are subjected to simulated working conditions. These vibrations need to be continuously measured both for control of the shaker table and the effects on test samples. Users derive important product quality data by comparing the shaker vibration stimulation to the resultant vibration in the test sample. This evaluation requires an intelligent data acquisition system with high speed simultaneous sampling and powerful analysis software.

The Delphin vibration measurement system is highly accurate because it captures vibration frequencies, phase changes and amplitudes before analysis is performed. The Expert Vibro records time domain data and also calculates [Fast Fourier Transform \(FFT\)](#) spectral analysis for frequency domain results. The Expert Vibro can even control the shaker through analog or digital outputs by triggering shut-off procedures, delivering email notifications, or performing other tasks if an alarm event occurs outside of the set points assigned by the user. Meanwhile configuration and measurement data are shown on the touchscreen display for added convenience.

HIGH-SPEED MEASUREMENT

The Delphin Expert Vibro solution represents a leap in technology because it provides users with high speed data acquisition, intelligent signal processing, analysis functions, local data storage and versatile communication options in a single device. With continuous sampling even the smallest of irregularities can be recorded to the internal 32 GB data storage capability, making it especially reliable and secure.



Using the latest dual-core FPGA processor technology for extensive computations and analysis, the compact Expert Vibro supports high sampling rates of up to 50kHz per channel while the 24-Bit A/D converter ensures high-precision measurement. All channels have galvanic isolation to prevent transverse distortions and the analog inputs can accept voltage or current inputs,

direct IEPE sensors or digital rotation sensors with full configuration ability present in the [ProfiSignal software](#).

PRACTICAL EXAMPLE

As part of its research and development, a manufacturer of cooling and refrigeration equipment is using an Expert Vibro system for shaker test stand measurements. Users acquire data from multiple synchronous accelerometer sensors and evaluate them using the ProfiSignal software. ProfiSignal is a complete software system for data acquisition, analysis, visualization and automation. The software is user-friendly and combines professional functionality with easy operation.

After data is measured and recorded, the optional ProfiSignal Vibro module provides evaluation of the recorded and real-time data using FFTs, cascade, time signal and orbit diagrams.

PLC AND PC INTERFACES

Expert Vibro data loggers can be connected to PCs via LAN or USB or various serial standards and Modbus TCP/IP and ProfiBus can connect to PLC systems. For large applications multiple Expert devices can be synchronized to process vibration data from many channels.

Optional integrated Wi-Fi, GSM, UMTS or LTE modules are available to extend the communication options for remote condition monitoring applications of operating rotating equipment.

For further information on the [Delphin Expert Vibro Systems](#), vibration measurement systems, or to find the ideal solution for your application-specific needs, contact a CAS Data Logger Application Specialist at **(800) 956-4437** or www.DataLoggerInc.com.