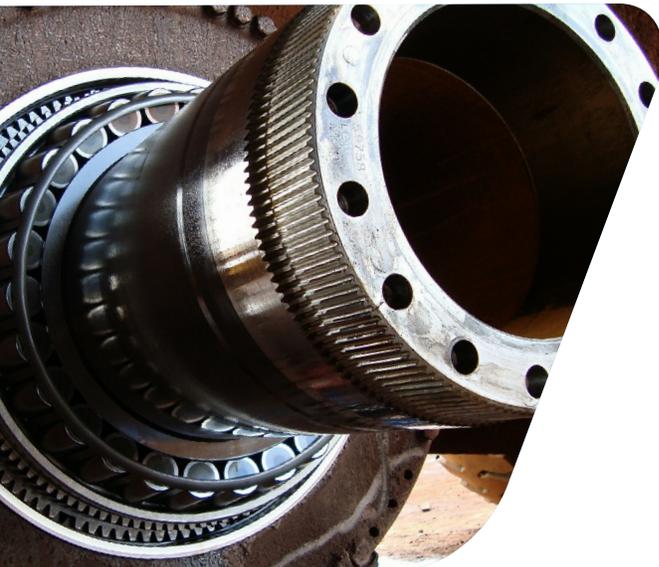


EQUIPMENT VIBRATION ANALYSIS WITH DELPHIN EXPERT VIBRO

REAL-TIME DAQ SYSTEMS IDEAL FOR VIBRATION MONITORING



CAS DataLoggers supplied the real-time [vibration data acquisition system](#) for a manufacturer who needed to perform equipment vibration analysis on their plant's manufacturing equipment as demands on machine up-time increased and quick breakdown response times became critical.

Management began searching for a system capable of continuous monitoring of bearing and shaft vibration at high accuracy and the ability to set up real-time alarms when parameters became unsafe. This solution also needed to include PC-based software allowing [fast Fourier transform](#)

and cascade and orbit diagrams of both live and historical data.

INSTALLATION

The company installed a [Delphin Expert Vibro Data Acquisition and Control System](#) adjacent to its equipment under inspection within its industrial grade enclosure. The Expert Vibro has 24 bit, 50 kHz bandwidth analog to digital converters to support the full spectral range of rotational vibration needs. With direct connection of IEPE accelerometers, hardware needs were simplified—no external signal conditioning was required. The system was available with up to 16 analog inputs and included digital

inputs with up to 1 MHz frequency for speed and key phasor synchronization.

USAGE

Accepting multiple input sensor types, eddy current, acceleration, velocity or mV, mA, and outputs with extended functions and software channels, the modular and scalable Expert Vibro system logged at high accuracies with up to 24-bit resolution. Extensive frequency domain processing was used in the Expert Vibro's hardware as

well as the integrated [ProfiSignal Software](#).

The Expert Vibro also featured analog and digital outputs, Ethernet and Profibus interfaces, and screw terminals for secure connections.

All the vibration data was monitored and displayed in both time and frequency domains with available in the box FFT and spectral analyses, on-line in real-time, and saved in a database. Combined with the digital output capabilities of the Expert Vibro, local alarms allowed immediate machinery shutdown

whenever preset limits were exceeded, reducing the potential for equipment damage. The data was also stored simultaneously within the Expert Vibro itself on its local memory.

Offline evaluation of historical data was available at any time, and setpoints were also provided such as main frequency, peak-to-peak, and s max as well as frequency band or envelope analysis. The ProfiSignal software's Vibro option enabled easy evaluation at a PC at any time with FFT, cascade, orbit and time signal diagrams. Additionally, an alarm module provided personnel with a completely reliable and secure fault notification system via email or SMS message.



BENEFITS

The Expert Vibro data acquisition system provided significant benefits to the manufacturer with its ability to obtain long-term information on the state of the plant's equipment and machinery. Now the plant had early warning of equipment damage and was able to plan more effective maintenance based on the most up-to-date conditions.

All vibration measurement data was regularly downloaded and automatically evaluated, with independent and continuous recording of up to 128 million characteristic values, process values or FFT analyses. ProfiSignal Basic automation and reporting software was easy to set up and ran without any need for user training, and the plant could always opt for future expansion via the Expert Vibro's modular design.

For further information on the [Delphin Expert Vibro data acquisition system](#), or to find the ideal solution for your application-specific needs, contact a CAS Data Logger Applications Specialist at (800) 956-4437 or visit the website at www.DataLoggerInc.com.