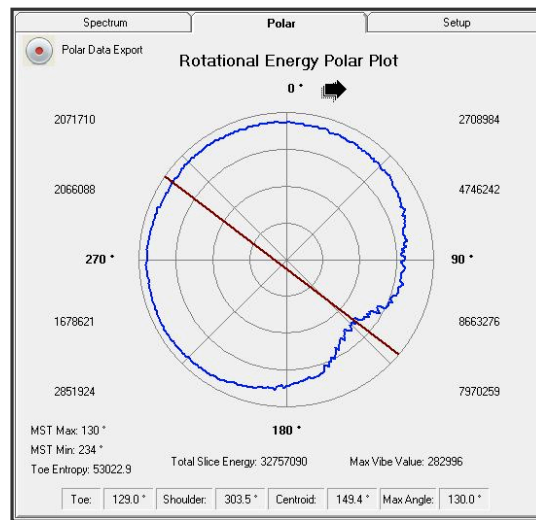


MineralScan MillSlicer

Comprehensive Mill Vibration Analysis

From over ten years of experience in mill production optimization and hundreds of sales in mill fill level vibration equipment for the cement industry, we have created the ultimate vibration analysis tool for minerals and mining.

Our high-performance Vibration Analysis system defines a new generation of instrumentation technology for the mining industry. It is based on high speed Digital Signal Processors (DSP) and high performance PC based User Interface.



Maximum Strike Point Polar Plot

Introduction

This new product is called MineralScan MillSlicer and it employs the latest Digital Signal Processor (DSP) technology from Texas Instruments as well as the most modern ultra low power high data rate RF communication circuitry to deliver reliable real-time vibration information both from the from key structural positions as well as from the mill shell.

This information is collected via two custom wide bandwidth sensors placed on the inlet and outlet bearing structures and one wide bandwidth custom sensor placed on the rotating mill shell. From these three signals, a highly accurate mill fill level measurement for automated loop control can be obtained as well as key real-time information on the input and output flow of material. Knowing the instantaneous fill level allows a plant to increase material throughput at traditional power levels.

The mill shell rotating sensor position is indexed using an easy to install magnetic boom. This position information allows us to determine the maximum ball strike location on the mill as well as toe/shoulder trajectory estimations.

Features

- Precise mill fill level measurements using our new adaptive fill level generation technology that takes into account the mill's rotational speed (RPMs).
- Real-time knowledge of where the balls are striking the mill shell for optimal mill speed control and liners protection.
- 4-20mA outputs for traditional automated loop control in the production control room.
- Ethernet interface for quick/easy calibrations, excellent real-time graphics and remote support.
- PC/Excel file historical data formats for enabling the generation of new tools to estimate mill liner and bearing wear via historical vibration analysis.
- Zero crosstalk signal input issues from adjacent mills and other nearby equipment.



Fixed Position Vibration Sensor

MAXIMIZE EFFICIENCY

Maximize your grinding circuit efficiency & prevent damage to the liners.

MINIMIZE DOWNTIME

Real-time knowledge of where the balls are striking the mill shell for optimal mill speed control and liners protection.

VIEW THE POLAR VIBRATION PROFILE

The vibration profile of the mill shell is displayed in a Polar Plot and is an indicator that the Mill load is striking the liners.

For more information contact:

Karl Gugel, Technical Sales

karl@digitalcontrollab.com

or

Stephen Forguson, Tech Sales

stephen@digitalcontrollab.com



DIGITAL CONTROL LAB

ETHERNET INTERFACE

The system provides an Ethernet interface for a high level PC software used for remote monitoring, calibration, etc.

EASY INTEGRATION

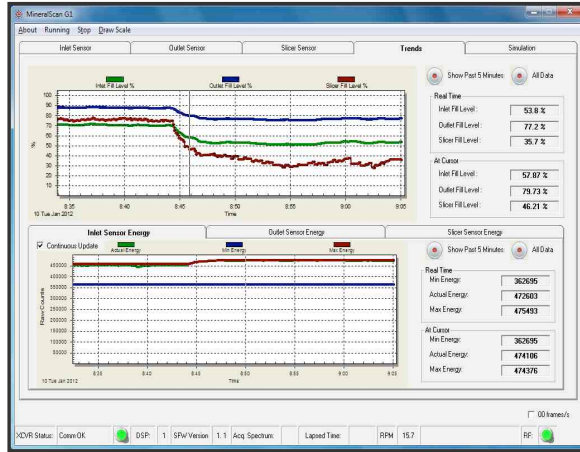
The Mill Slicer System can be easily integrated into the Mill process control system allowing the user to fine tune the process operation.

LOCAL PANEL

The local Operation Panel allows the user to monitor the mill vibration patterns from the field.

SERVICES AVAILABLE

Technical Support
Installation and Setup
Maintenance
Application Support
Hardware Support
Software Support



Mill Fill Levels and Vibration Energy Trends

Specially developed under Windows environment, the software insures real time monitoring. Main displays are: Inlet, Outlet and Shell vibration fill levels, Rotational Energy Polar Plot.

System Components

- Custom wide bandwidth fixed position inlet bearing vibration sensor.
- Custom wide bandwidth fixed position outlet bearing vibration sensor.
- Mill shell based wide band vibration sensor and DSP unit with Lithium battery pack and indexing sensor
- Magnetic tipped easy adjustable boom.
- Main unit containing a high speed PC with Proprietary signal processing circuitry and a Touch screen monitor.

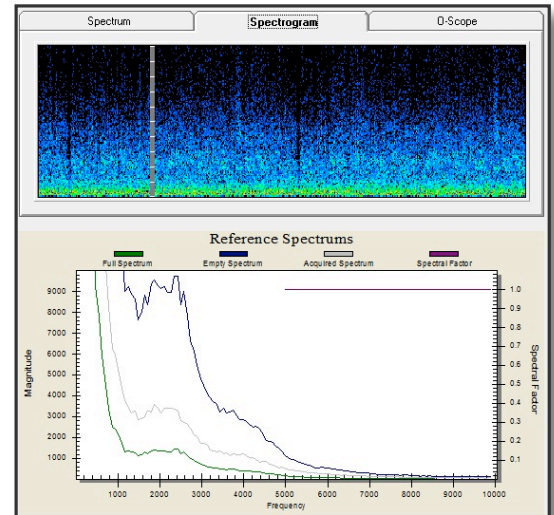
System Specifications

- Model: MillSlicer
- Power Supply: 115/230 VAC 50/60 Hz
- Operating Temperature: -10 to 70 °C
- Panel Material: Stainless Steel
- Panel Rating: IP65
- Panel weight: 15 Kgs.
- Analog Output Signals: 4 to 20 mA
- Analog Output Scale: 0 to 100 %
- Ethernet Interface: Standard RJ45 Cable
- Sensors cables Length: As required onsite

Benefits

The Mill Slicer system provides on-line measurement of fixed and rotational vibration pattern helping mill operators to prevent damages to the liners and providing the following benefits:

- Increased ROI on your existing SAG mills
- Lower production/power costs
- Reduced output particle size standard deviation
- Reduced liner wear due to more efficient mill control and increased material capacity



Mill Spectrogram and Spectrum



DIGITAL CONTROL LAB

3701 NW 40th Terrace, #1
Gainesville, FL 32606

Phone: +1 (352) 692-0800
Fax: +1 (813) 649-8390

Technical Assistance: Karl Gugel, Ph.D.
Karl@digitalcontrollab.com

Sales & Support: Stephen Forguson
Stephen@digitalcontrollab.com