

MSSA

Intelligent Grinding Sound
Spectrum Analyzer



Intelligent Grinding Sound Spectrum Analyzer (MSSA)

I. Product Overview

Intelligent Grinding Sound Spectrum Analyzer (MSSA) is an online detecting instrument for detection of all kinds of mill load status. The product consists of two parts – transmitter and electret sensor. Aiming at complex and fickle mill noise signal, the product improves the detecting accuracy and sensitivity on mill load by software and algorithm as well as advanced signal collecting & processing module. Unique sensor structure design philosophy enables the product providing stable and precise data under harsh working condition, which significantly reduces the work load for routine maintenance.



II. Product structure

MSSA utilizes the regularity variation of time-frequency characteristic of mill sound signal. It uses JFTA technology to transfer time signal of mill sound collected by the sensor into frequency signal, and build mathematical model of characteristic frequency and mill sound. MSSA judges the mill operating status according to the variation of characteristic frequency.

III. Product structure

- Non-contact type online detecting instrument.
- The adjustment of parameters is automatically and dynamically made by system, which is more accurate and convenient.
- Mill sound frequency spectrum analysis by using advanced signal processing technology.
- Self-learning ability, the system will choose the model which is most suitable for the current

mill operating condition and take it as blueprint to conduct spectrum analysis.

- Unique sensor structure design which adaptable to harsh environment.
- Ensure the mill operation at its best condition, improves production efficiency, saves energy and reduces emission.

IV. Technical Parameters

Operating mode	
<ul style="list-style-type: none"> ● Measurement object ● Measurement principle 	<p>Mill sound</p> <p>Mill sound spectrum analysis</p>
Input	
<ul style="list-style-type: none"> ● Frequency range ● Sensitivity ● SNR 	<p>20~16000Hz</p> <p>-34~-49dB (0dB=1V/Pa, 1KHz)</p> <p>≥58dB</p>
Output	
<ul style="list-style-type: none"> ● Analog output ● Digital output 	<p>2-way 4~20mA</p> <p>RS-485</p>
Design	
<ul style="list-style-type: none"> ● Weight ● Shell material ● Color ● Protection level 	<p>transmitter about 1kg</p> <p>electrets sensor about 2kg</p> <p>transmitter ABS</p> <p>electrets sensor Al, Fe, Teflon</p> <p>transmitter dark grey</p> <p>electrets sensor green hammer powder</p> <p>transmitter IP30</p> <p>electrets sensor IP65</p>
Nominal operating condition	

Location	Indoor
● Ambient temperature	-20~60℃
● Ambient relative humidity	10%~85%
Power supply	
● For transmitter	220V AC, ±15%
Display & Control	
● Display mode	Streamer and nixie tube
● Control mode	Keys control

V. Applications of the product in mineral processing automatic control systems

MSSA is a kind of high performance product in the industry, its unique designing idea and professional processing technology provide a perfect solution for mill load detection in mineral processing industry.

MSSA is widely used for mill load detection of SAG, grate ball mill, overflow ball mill, etc. It utilizes most advanced signal processing technology to realize accurate judge on mill load.



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