

EBO

User manual

I. Product Introduction:

EBO-M80XG grinding sound meter is the latest grinding measurement products jointly developed by our company and foreign companies, the core algorithm by a professional team with half a century of research and development experience, more suitable almost perfect products of the current grinding machine conditions,

human-machine interaction, continues the tradition of M8, still use LCD display, full digital keyboard for the industry, more convenient and fast operation, the product absorbed the essence of M8, some settings in M8 software automatic adjustment, simplify the use of operation, and added some more optimized parameters, make the measurement more accurate.



II. Working principle:

The intelligent grinding sound meter receives the noise from the mill to the instrument via the shielding cable and transforms to the digital material percentage display while output the 4~20 mA current signal proportional to the material value for the back-end DCS system. The material value is proportional to the grinding material filling amount, inversely proportional to the noise generated by the mill, so it can quantitatively measure the size of the mill load. The operator can control the flow of various grinding raw materials according to the level of the grinding sound, thus realize the control of the mill load, improve the mill output

and reduce the lowest power consumption. Its internal correction signal source, for the maintenance personnel inspection and maintenance, and has a full ground air grinding sound and light alarm device, can remind the operator to make timely processing.

III. Performance indicators:

- 1, measurement range: 000% -100% or 80-140db (Description required when ordering)
- 2, probe impedance: $600 \Omega \pm 15\%$ or $250 \Omega \pm 15\%$
- 3, frequency range: 50~18,000HZ
- 4, sensitivity: $73\text{dB} \pm 2 \text{ dB}$
- 5, output sound strong signal: 4~20mA
- 6, Measurement Error: $\pm 0.1\%$
- 7, constant current accuracy: the output current changes better than 0.5% during load change
- 8, operating temperature: $-20 \text{ }^{\circ}\text{C} \sim +40 \text{ }^{\circ}\text{C}$
- 9, ambient humidity: <85%
- 10, power supply voltage: Input: 50Hz, $\sim 220\text{V} \pm 10\%$
- 11, chassis size: high \times \times W \times deep 73 \times 150 \times 160 mm
- 12, with load capacity: <200 Ω
- 13, frequency selection: 8 segments
- 14, current output: The positive / reverse ratio can be set by the interface
- 15, current adjustment: full digital adjustment without removing the machine adjustment potentiometer

IV. This measuring instrument has the following advantages

compared with similar products on the market:

- 1, LCD display, easy to operate;
- 2, products have light quality and convenient installation;
- 3, has high current resistance and strong voltage impact capacity;
- Wide 4, frequency range and good response characteristics;
- 5, active filter, with frequency selection characteristics;
- The 6, grinding sound signal is stable and smooth;
- 7, has good directivity and little interference by the adjacent machine;
- The 8, itself has a self-calibration signal that can conduct in-machine calibration;
- 9, grinding sensor is fully sealed, which can be suitable for high humidity and high dust conditions;
- 10, and control computer connection to form the mill load control system can improve the mill output, prevent full grinding and empty grinding, reduce the workers' labor intensity, and improve the labor productivity.

V. User interface and use introduction:

5.1. Open the machine interface

The user on the instrument can see the display interface of the company name, please reset after turning on. As shown in Figure 5-1 below.

5.2. Measurement interface

After 2 seconds, the instrument automatically enters the measurement interface, as shown in Figure 5-2 below.






Figure 5-2 Material measurement display interface

EBO-M801G:The value displayed by the material grinding sound meter is proportional to the material position, i. e., the more material in the cabin, the greater the material position value, and the less the material inside, the smaller the material position value.

EBO-M803G:Display range: 80-140 db, the value displayed by the material grinding sound meter is inversely proportional to the material position, that is, the more materials in the cabin, the smaller the material position value, the less the internal material, and the greater the material position value.

5.3. Set up the interface

When the user presses the Setting key  , enter the setting interface, press  and  to choose up and down, press Setting key to confirm. After the setting, press ok to return to the main interface and save the updated data. The setting interface is shown in Figure 5-3.

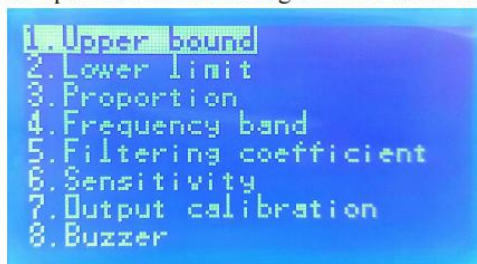
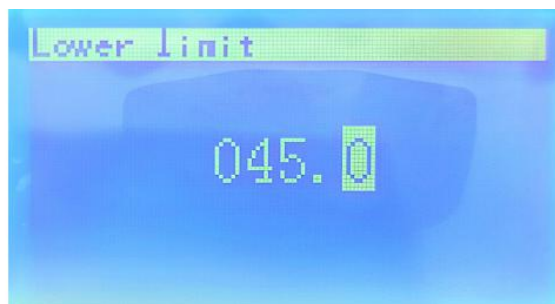


Figure 5-3

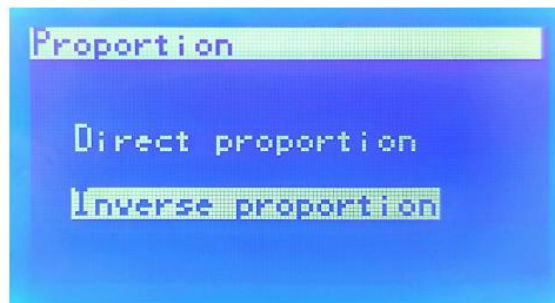
Upper limit: indicates the maximum value in percentage form, that is, when the material level in the mill is greater than XXX.00% of the full material level. The maximum can be set to 100.00% and the minimum is 000.00%.



Lower limit: indicates the minimum value in percentage form, that is, the light alarm when the grinding material level is less than XXX.00% of the full material. The maximum can be set to 100.00% and the minimum is 000.00%.



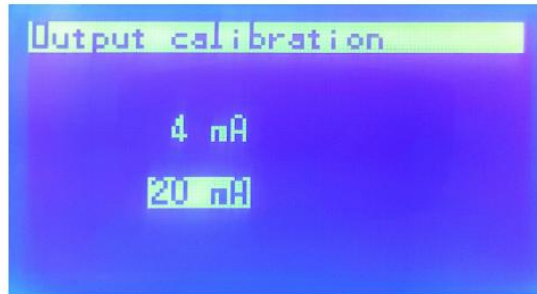
Proportion: select the ratio between output and display, with two modes of positive proportional and negative proportional, to adapt to different DCS systems;



Frequency band: select the frequency range of grinding mill, 1-8 optional;



Output calibration: The range calibration of the output current, after selecting one of the values, the key **+** **-** can fine-tune the output current, press **Mode** and **Measure** can coarse adjust the output value;



Bezzel: Set the bezzel **▲** or **▼** function; In the parameter settings interface, press key **OK** to adjust the cursor position. After setting, press save parameters and exit to Figure 1-3.



Sensitivity: set the sensitivity level; In the parameter settings interface, press **▲**, **▼**, **←**, **→**, key to adjust the cursor position, press **+**, **-** You can change the value of the cursor's position. After the setting, press save **OK** parameters and exit.



Filtering coefficient: Used to adjust the smoothness of the display, the data 0-32 is optional



5.4. Self-inspection interface

If the instrument is found to be operating improperly, press the self-test key and the circuit will enter the self-test, as shown in Figure 5-5 below: when the final self-detection value is



displayed as 20% ($\pm 1\%$ error), indicate the instrument

The partial circuit is normal, otherwise the circuit may be damaged. If the circuit is still not used normally, please do not remove the instrument by themselves. Please contact the manufacturer in time. We will solve the problem for you as soon as possible.



Appendix: 1. Rear panel wiring terminal diagram:



Terminal is followed from left to right:

- (1) Sensor input terminal;
- (2) The 4-20mm current output terminal;
- (3) Often closed point output NC (by default, according to user needs);
- (4) Power supply AC220V input terminal.

II. Installation schematic diagram:

2.1 Standard installation location

- (1), Longitudinal (see Figure 2)

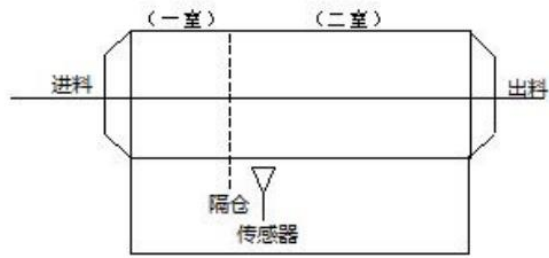


图 2

(2), circumference direction: $\alpha = 30^\circ \sim 40^\circ$

Distance between (3), mill and audio receiver $50 \leq D \leq 100\text{mm}$ (See Figure 3)

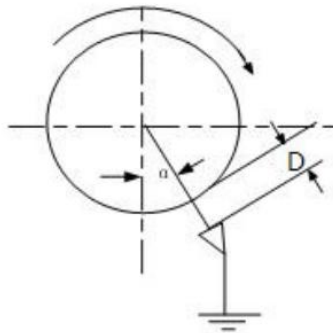


Figure 3

2.2 Installation

The installation position of the audio receiver is important and it must be carefully as carefully as possible in locations that can accurately capture the mill load and the crushing state. The mounting position of the audio receiver varies depending to the mill. Please install the following below.

The (1), audio receiver is as close to the mill as possible and not face obstacles like bolts, check holes, blind plates, etc.

The (2), audio receiver is best for the position where the crush falls when the mill runs in the circular direction. As shown in Figure 4

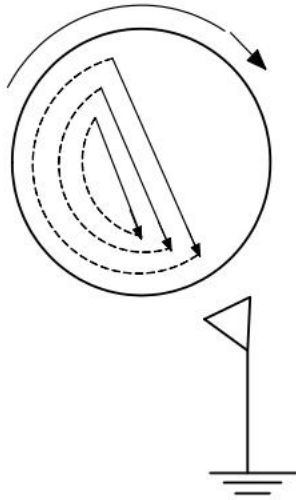


Figure 4

2.2 Installation

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