USER GUIDE FOR CDW-13B NOISE SENSNOR

CDW-13B-01-MN-10	SEP-2024

This document is applied for the following products

SKU	CDW	HW Ver.	1.0	FW Ver.	1.0
Item Code	CDW-13B	Noise Sensor, RS485 RS232 Output, Aluminum alloy , 30-130dB ±3dB@23±5℃			

1. Introductions

Noise sensor is a kind of digital and modular multi-function sound level meter.Using a digital signal processing chip and digital detection technology, has a high reliability, good stability, wide dynamic range, without range switching, etc.Can be widely applied to various machines, vehicles, ships, electrical appliances and other industrial noise measurement, can also be used for environmental noise measurement, labor protection, industrial hygiene.

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2. Specification

Item	Technical Specification
Range	30-130dB
Accuracy	±3dB@23±5℃,accordance with IEC 61672 standard type 2, calibrated at 94dB(1kHz) input
Frequency response	31.5Hz - 8kHz.
Corrector	B&K 4226
Microphone	Capacitive microphone , size: 0.5 inch
Supply	5VDC,12-24VDC
Output	RS485
Power Consumption	<20mW
Response Time	<200ms
Operating Temperature	-10℃-+50℃@5-80%RH
Storage	-40-70℃@20%-90%RH
Shell Material	ABS & 304SS

3.Working Process

Capacitive microphone: This is the core component of the sensor, consisting of a electret surface and a back electrode, with a small air gap in the middle to form a flat capacitor. The free charge is distributed on the electret film, and when the sound wave causes the film to vibrate and produce displacement, the distance between the two plates of the capacitor will be changed, thus causing the capacity of the capacitor to change.

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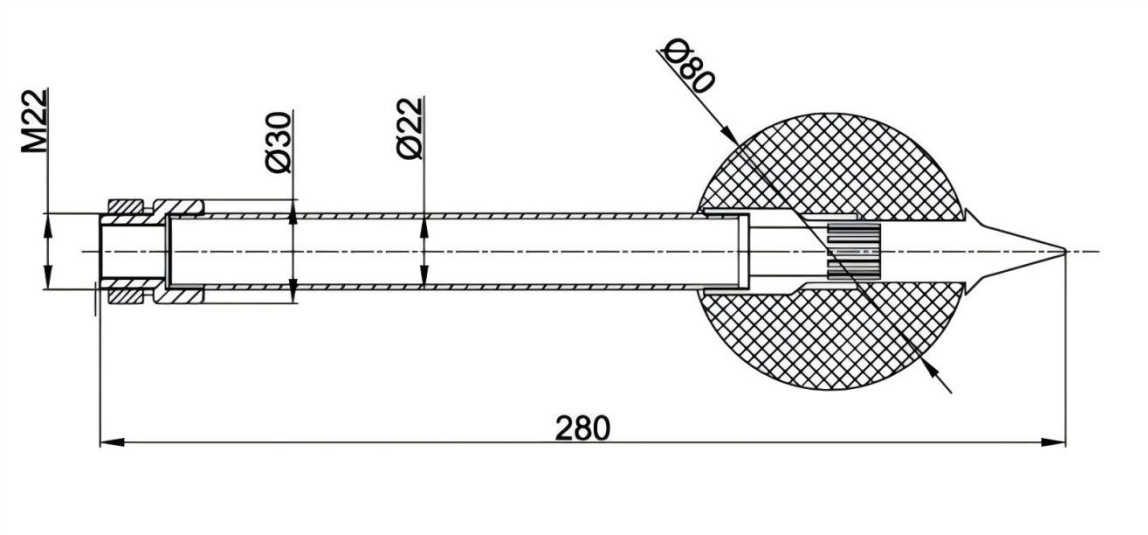
4. Electrical Connections

Connector(cable)	RS232/RS485
Red	V+
Yellow	TXD/RS485A
Black	V-
Blue	RXD/RS485B

5. Dimensions



6. Installation

Screw Fixation

Shell cleaning

Clean the housing of the noise sensor regularly to keep its appearance clean and clean, and prevent dust, dirt, etc., from affecting the performance of the sensor. Use a clean, damp cloth to gently wipe the surface of the shell. Be careful not to use corrosive or strong cleaning agents to avoid damage to the shell.

Microphone cleaning

The microphone part of the noise sensor is a critical component and needs to be cleaned regularly. You can use a soft brush or compressed air to gently clean the dust and debris on the surface of the microphone, be careful not to use too much force to avoid damage to the microphone.

For noise sensors installed outdoors, special attention should be paid to prevent dust, rain, leaves and other debris from piling up on the sensor. The environment around the sensor can be cleaned regularly to ensure that the sensor is well ventilated to avoid clogging and affecting the measurement results.

7. Communication Protocol（MODBUS）

Transmission mode: MODBUS-RTU,**Baud rate:** 9600bps,**Data bits:**8,**Stop bit:**1,**Check bit:**no

Slave address:the factory default is 01H (set according to the need,00H to FFH)

7.1 The 03H Function Code Example: Read Noise value

01 03 00 00 00 01 840A
Slave Response

01 03 02 02 55 791B

Noise:(0255)H= (597)D, 597/10=59.7dB

7.2 The 10H Function Code Example: Modify the slave address

Host Scan Order (Changed to 01H, read and write address must be 00H):
00 10 01 BDC0

Slave Response:
00 10 007C

If you forget the original address, you should use the broadcast address(FEH) (ensure that no other devices on the bus at this time).

Note:
1. All underlined is fixed bit;

2. The last two bytes is CRC check command.

Note: This product has been tested and complies with European CE requirements for EMC directive.

8. Troubleshooting

If some error occurs, such as no output or unreliable. Please disconnect the sensor first, then check if the sensor installation and connection is correct with the instruction manual.

If still not successful, please contact our company.

9. Support contacts:

Complies with applicable CE directives.

Manual subject to change without notice. Version 1.0

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