RK300-06 Noise Sensor

User Manual

Revision time	Reviser	Current Version	Remarks
20250416	SUN	V5.0	

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User Notice

Please read this manual carefully before use to ensure safe and optimal operation. Retain this manual for future reference.

Pre-Use Instructions

- Carefully review this manual and follow all operational and safety guidelines to prevent malfunctions and hazards.

Unpacking Inspection

- Upon receipt, carefully inspect the sensor device and accessories for any shipping damage.
- If damage is detected:
- Immediately notify the manufacturer and distributor.
- Retain all packaging materials for return or replacement processing.

Parts List

Item	Quantity	Remarks
Noise sensor	1	
Cable	1	The length depends on the order

1. Product Introduction

RK300-06 is a kind of digital and modular multi-function sound level meter.Using a digital signal processing chip and digital detection technology, it has a high reliability, good stability, wide dynamic range, without range switching, etc.It can be widely applied to various machines, vehicles, ships, electrical appliances and other industrial noise measurement, it can also be used for environmental noise measurement, labor protection, industrial hygiene.

2. Product Features

- High sensitivity
- Fast response
- Low consumption
- Excellent stability
- Long service life

3. Specification

Item	Technical Specification
Range	30~130dB(A)
Resolution	0.1dB
Accuracy	±3dB@23±5℃,Accordance with IEC 61672 standard type 2, calibrated at 94dB(1kHz) input
Frequency Response	20Hz-12.5kHz
Sensitivity	- 38 ± 3dB (or 12.6mv/Pa)
Corrector	B&K 4231
Calculation Method	A weighting
Microphone	Capacitive microphone,size: 0.5 inch
Supply	5VDC,12-24VDC
Output	RS485
Ingress Protection	IP65
Power Consumption	<0.5W@12V
Response Time	<200ms
Operating Temperature	-20℃-80℃@@10-90%RH
Storage	-40-80℃@20%-90%RH
Shell Material	Aluminum alloy
Net Weight(Unpacked)	165g

4. Electrical Connections

Connector(Cable)	RS485	Current/ Voltage
Red	V+	V+
Black	V-	V-
Yellow	RS485A	Signal+
Blue	RS485B	

5. Output Types & Formulas

Current Type(Range:30~130dB)	W=(I-4)/(20-4)*100+30
Voltage Type(Range:30~130dB)	W=U/(full scale voltage-zero point voltage)*100+30

W: Noise value in dB;

I: Transmitter output current in mA;

U: Transmitter output voltage in V;

6. Product Dimensions

Unit：mm

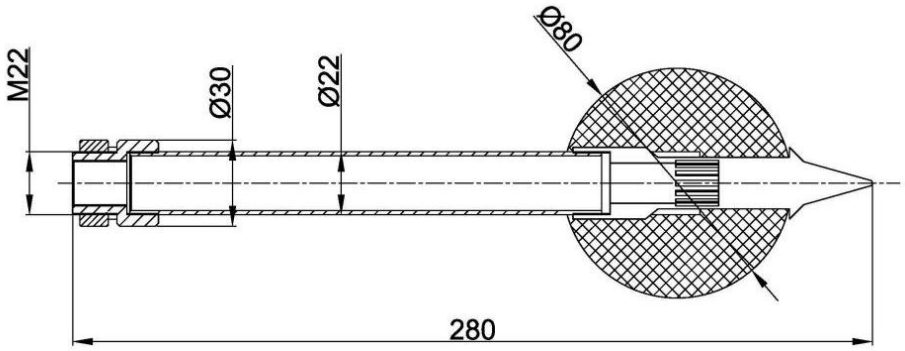

Figure 6.1
Appearance Dimension Diagram

7. Communication Protocol（MODBUS-RTU）

Parameter	Value
Data Bits	8 bits
Check Bit	None
Stop Bit	1 bit
Baud Rate	9600 bps
Slave Address	0x01 (Factory Default)

7.1 Read Real-Time Data

Client sends:

01 03 00 00 00 01 840A

Return:

01 03 02 02 55 791B

7.1.1 Description of Return Data Format

No.	Conception	Byte Number	Description	Remarks
1	Address block	1	Address(0x01)	0x01
2	Function code	1	Only read(0x03)	0x03
3	Number of bytes	1	0X02	2bytes
4	Data block	2	Noise value	0x0255(59.7dB)
5	Check block	2		0x79 0x1B

7.2 Modify Slave Address

Client sends:(Change slave address from 00H to 01H)

Slave id	Function code	New Address	CRC_L	CRC_H
0x00	0x10	0x01	0XBD	0XC0

Response:

Slave id	Function code	CRC_L	CRC_H
0x00	0x10	0X00	0X7C

7.3 Read Sensor Address

Client sends:

Slave id	Function code	CRC_L	CRC_H
0x00	0x20	0x00	0x68

Return:

Slave id	Function code	Current Address	CRC_L	CRC_H
0x00	0x20	0x01	0xA9	0xC0

8. Installation Guidelines

- Avoid approaching areas that are prone to vibration or airflow interference, such as fans, air conditioning outdoor units, doors and windows, to ensure that the measured noise is the target noise rather than the equipment's own vibration.

8.1 Installation Method

- Please keep the installation facing upwards.

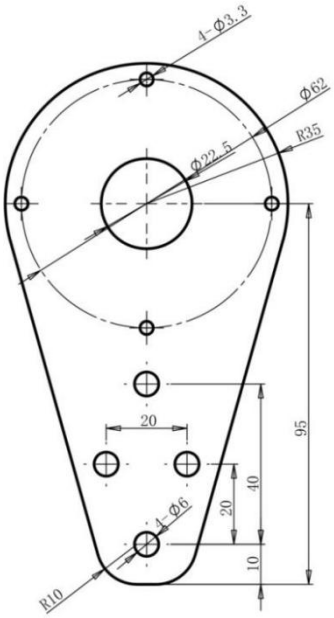

Figure 8.1.1
Mounting Plate(optional) Dimensions and Hole Specifications(Unit:mm)

Figure 8.1.2
Installation Diagram (Install upward)

9. Precautions

Powered Wiring Prohibition

- Do not connect wires while powered. Only energize the sensor after confirming correct wiring.

Component Modification Restriction

- Do not alter factory-soldered components or pre-connected wires.

Precision Handling Requirement

The sensor is a precision device. Avoid:

- Unauthorized disassembly
- Do not touch internal components to prevent product damage

  Note: Unauthorized modifications void the warranty.

10. Troubleshooting

Incorrect Output Signals (Analog/RS232/RS485):

- Verify wiring correctness and secure connections.
- Check if the serial port is occupied or malfunctioning.
- Confirm serial port settings (baud rate, data/stop bits) match device requirements.

Persistent Issues:

- Contact the manufacturer if the above steps fail to resolve the problem.

11. Product Maintenance

Maintenance and Safety

- Regularly clean and inspect the sensor to maintain performance.
- Do not expose the sensor to extreme temperatures, moisture, or corrosive substances unless explicitly specified.
- Unauthorized disassembly, modification, or repairs may void the warranty and lead to malfunctions.

Troubleshooting Protocol

- In case of malfunction, refer to the troubleshooting section of this manual.
- Do not attempt unauthorized disassembly or repairs.
- Contact the manufacturer's after-sales department directly for technical support.

12. Warranty Terms

This product comes with a one-year warranty, starting from the date of delivery. Within twelve months, the Company shall be responsible for free repair or replacement of any failure caused by sensor quality issues (non-human damage). Fees will be charged for repairs or replacements after the warranty period expires.

CE Complies with applicable CE directives.

Manual subject to change without notice.

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