RK300-06 Noise Sensor

User Manual

Revision time	Reviser	Current Version	Remarks
20250417	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.
- Check that the packaging is intact and verify the product model matches the selected specifications.

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	±1.5dB(Calibrated at 80dB(2kHz) input)
Frequency Response	31.5Hz - 8kHz.
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	4-20mA, RS485,RS232
Ingress Protection	IP65
Power Consumption	0.24W@12V
Response Time	<200ms
Operating Temperature	-20℃-80℃@@10-90%RH
Storage	-40-80℃@20%-90%RH
Shell Material	Aluminum alloy
Net Weight(Unpacked)	200g

4. Electrical Connections

Connector(Cable)	RS485	Current
Red	V+	V+
Black	V-	V-
Yellow	RS485A	Signal+
Green	RS485B	

5. Output Types & Formulas

Current Type(Range:30~130dB)	W=(I-4)/(20-4)*L+30

W: Noise value in dB;

I: Transmitter output current in mA;

L:Noise measurement range.

6. Product Dimensions

Unit:mm

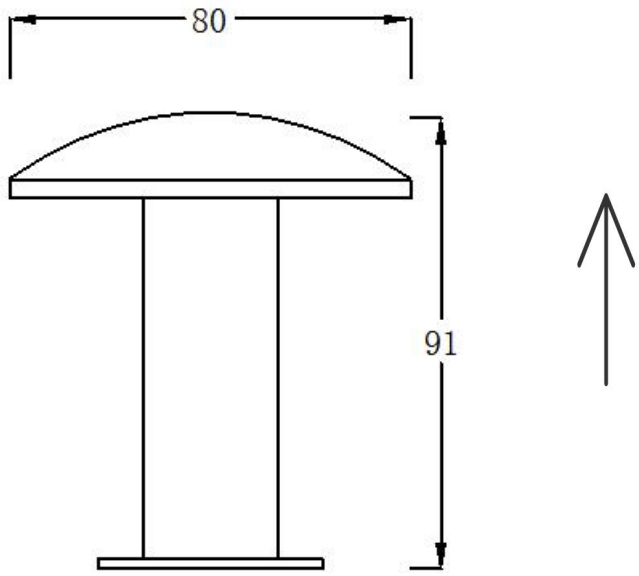

Figure 6.1 Side view (Install upward)

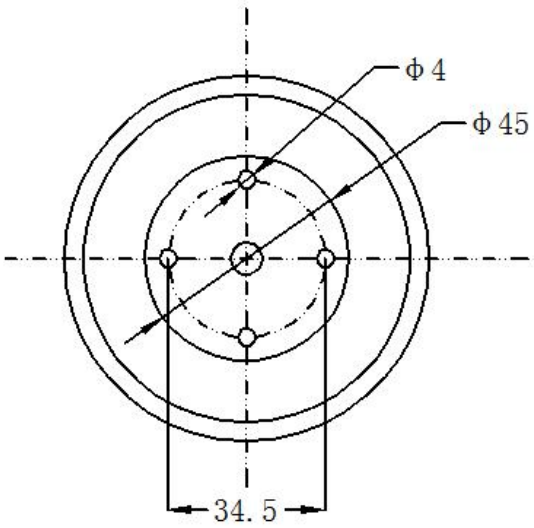

Figure 6.2 Top view

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 01H to 02H.)

Slave id	Function code	Address_H	Address_L	New id_H	New id_L	CRC_L	CRC_H
0x01	0x06	0x00	0x2F	0x00	0x02	0x39	0x2C

Response:

Slave id	Function code	Address_H	Address_L	New id_H	New id_L	CRC_L	CRC_H
0x01	0x06	0x00	0x2F	0x00	0x02	0x39	0x2C

8. 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

Installation position

- 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.

  Note: Unauthorized modifications void the warranty.

9. 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.

10. 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.

11. 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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