Outdoor Noise Sensor User Manual

1. Features

This noise sensor is an industrial-grade noise monitor designed to meet noise testing requirements in industrial environments. It is compatible with monitoring systems and provides continuous, fixed-point noise monitoring. It is widely applicable in warehouses, server rooms, production workshops, archives, libraries, schools, shopping malls, smart home systems, building control systems, airports, and railway stations.

2. Technical Parameters

- ⊙ Measurement Range: 30 dB – 130 dB
- ⊙ Resolution: 0.5 dB
- ⊙ Accuracy: ±1.5 dB (A-weighted)
- ⊙ Frequency Range: 10 Hz – 20 kHz
- ⊙ Time Weighting: F
- ⊙ Operating Temperature: -20℃ to 70℃
- ⊙ Relative Humidity: 25% – 90%
- ⊙ Atmospheric Pressure: 65 kPa – 108 kPa
- ⊙ Lead Wire Length: 2.5 meters (customizable)

★ Voltage Output Type

Power Supply: 7–24 V DC

Output Signal: 0-2V/0-5V

Noise Value = (Output Voltage - 0.4) / 1.6 * 100 + 30

★ Current Output Type

Power Supply: 9–24 V DC

Output Signal: 4–20 mA

Noise Value = (Output Current - 4) / 16 * 100 + 30

★ RS485 Type

Power Supply: 7–24 V DC

Communication Protocol: Modbus Protocol

3. Wiring Instructions

Model	Aviation Connector Pinout	Wire Color Coding
Voltage Output Type	1 (V+): Power Positive 2 (G): Power Ground 3 (Vo): Voltage Output Signal 4 (No Connection)	Brown (V+): Power Positive Yellow (G): Power Ground Blue (Vo): Voltage Output Signal

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Current Output Type	1 (V+): Power Positive 2 (G): Power Ground 3 (Vo): Current Output Signal 4 (No Connection)	Brown (V+): Power Positive Yellow (G): Power Ground Blue (Vo): Current Output Signal
RS485 Interface Type Modbus Protocol	1 (V+): Power Positive 2 (G): Power Ground 3 (T+): RS485+/A/T+ 4 (T-): RS485-/B/T-	Red (V+): Power Positive Black (G): Power Ground Yellow (T+): RS485+/A/T+ Green (T-): RS485-/B/T-

4. Modbus Protocol

⊙ **Default communication parameters:**

Baud rate 9600 bps, 1 start bit, 8 data bits, no parity, 1 stop bit.

⊙ **Modbus registers**

Parameter Name	Registry Address	Parameter Type	Modbus Function Number	Parameter Range and Description	Default Value
Noise Value	0x0000	INT16, Read-only	0x03/Read	300-1300 divided by 10 to get the actual noise value.	None
Modbus Slave Address	0x1000	INT16, Read/Write	0x03/Read 0x16/Write	0-255	2

⊙ **Modbus Register Parameter Description**

Noise Value		
Parameter Range	300–1300	Default value: None
Parameter Storage	None	-

Meaning: Measured noise value

Example: If the returned value is 0125 (hexadecimal, raw format)—where the first byte (high byte) is 00 and the second byte (low byte) is 25—then the measured noise value is (01 × 256 + 25) / 10 = 65.0 dB.

Modbus Slave Address (ADDRESS)		
Parameter Range	0–255	Default value: 2
Parameter Storage	Immediate storage	-

The Modbus address can be set within the range of 0–255. Address 0 allows for the configuration of any address; the module must be power-cycled (restarted) after setting the address for the change to take effect.

⊙ **Example**

1. Example: Reading register 0x0000 (the measured noise value)

Request: 02 03 00 00 00 01 84 39 (8 bytes)

Device Address	1 byte	0x02
Function Code	1 byte	0x03
Starting Register Address	2 bytes	0x0000
Number of Registers	2 bytes	0x0001
Checksum	2 bytes	0x8439

Response: 02 03 02 00 25 3D 9F (7 bytes)

Device Address	1 byte	0x02
Function Code	1 byte	0x03
Number of Bytes	1 byte	0x02
Data	2 bytes	0x00 (High byte)
-	-	0x25 (Low byte)
Checksum	2 bytes	0x3D9F

2. Example: Modify register 0x1000 (Modbus slave address)

Request: 00 16 10 00 00 01 02 00 03 7A 2A (11 bytes)

Device Address	1 byte	0x00
Function Code	1 byte	0x16
Starting Register Address	2 bytes	0x1000
Number of Registers	2 bytes	0x0001
Byte Count	1 byte	0x02
Write Device Address	2 bytes	0x0003
Checksum	2 bytes	0x7A2A

Response: 00 16 10 00 00 01 8C D8 (7 bytes)

Device Address	1 byte	0x00
Function Code	1 byte	0x16
Starting Register Address	2 bytes	0x1000
Number of Registers	2 bytes	0x0001
Checksum	2 bytes	0x8CD8

WARNING

Failure to follow the specified wiring sequence may damage the device and any connected instruments.

Exceeding the device's maximum rated input power will cause damage to the device.

CAUTION

Read this manual thoroughly before use.

Connect the device wiring correctly.

Initial Checks

* Verify that the device matches the one you purchased.
* Inspect the device for any physical damage.
* Check that all accessories are included.