
User manual of IOT-S300NOIS Noise Sensor

●Product description

The noise sensor can be widely used for environmental detection and is installed in a standard mounting housing. The device uses (4~20) mA, (0~5)V, (0~10)V, standard MODBUS-RTU communication protocol, RS485 signal output. . This transmitter is widely used in applications where ambient noise is required.

●Features

- (10~30)V wide DC voltage supply
- (4~20)mA, (0~5)V, (0~10)V, standard MODBUS-RTU communication protocol
- High sensitivity, low power consumption
- Temperature compensation, excellent linear output

●Technical indicators

Supply voltage	(10~30)VDC, (0~10)V output limit 24VDC
Precision	High accuracy: ± 0.5 dB low accuracy: $2\%FS \pm 0.5$ dB (Reference standard: 94 dB@1KHz)
Measuring range	range: 30~120 dB frequency: 20Hz~12.5KHz
output signal	(4~20) mA、(0~5) V、(0~10) V 、RS485 (Modbus RTU communication protocol)
Maximum power consumption	Analog signal: 1.2W, digital signal: 0.4W
Operating temperature	-20~60°C 0%RH~80%RH
Storage temperature	-20~80 °C

● Electrical interface and connection method



● Attention

- 1 After opening the product packaging, please check whether the appearance of the product is intact, verify that the relevant content of the product manual is consistent with the product, and keep the product manual for more than one year;
- 2 Strictly follow the wiring diagram of the product, and work under the excitation voltage of the product, do not use over voltage;
- 3 Do not knock the product to avoid damage to the appearance and internal structure;
- 4 The product has no customer self-repair parts, please contact our company in case of failure;
- 5 When the product is failure in normal use, the warranty period is one year (from the date of shipment from the company to the 13 months after the return date). The inspection standard is in accordance with our QC 's test result. After the deadline for maintenance, the company charges a cost fee, all products of the company for lifetime maintenance;
- 6 If you have any question, please check our website or call us.

● Important statement

Thank you very much for purchasing the Firstrate brand sensor products, we will serve you forever. Firstrate Sensor pursues outstanding quality and pays more attention to good after-sales service. If you have any questions, please call:

400-607-8500 (7 x 24h).

Operational errors can shorten the life of the product, reduce its performance, and can cause accidents in severe cases. Please read this manual carefully before using it. Submit this manual to the end user. Please keep the instructions in a safe place for your reference. The manual is for reference. The specific design shape is subject to the actual product.

IOT-S300NOIS (RS485) MODBUS communication protocol

● The basic settings of the communication protocol

Transmission mode: MODBUS-RTU mode.

Communication parameters: default baud rate 9600bps (optional 2400bps, 4800bps, 9600bps, 19200bps, 38400bps, 57600bps, 115200bps, can be configured according to user requirements), 1 start bit, 8 data bits,

no parity (optional odd) Check, even parity), 1 stop bit, after changing the communication parameters, it is recommended that the sensor be powered on again.

Slave address: The factory default is 1, which can be configured according to user requirements.

- keep the register list

parameter	MODBUS holding register address (16 bits)
Noise value	Address: 0000H, the reading value divided by 10 is the noise measurement value, for example, the reading value is 0x0258, converted to decimal 600, the noise measurement value is 60.0dB.
Baud rate	Address: 0014H The setting values are 24, 48, 96, 192, 384, 576, 1152, corresponding to the baud rate, 2400, 4800, 9600, 19200, 38400, 57600, 115200, for example, the default baud rate is 9600, the setting value is 0x0060
Check Digit	Address: 0015H 0x0000 means no parity, 0x0001 means odd parity, 0x0002 means even parity
Slave address	Address: 0017H Default: 0x0001

Note: Access is prohibited for other addresses.

- Modbus RTU instruction

Supported MODBUS function codes: 0x03, 0x06

Example of 03H function code: Read the noise measurement data of the sensor whose slave address is No. 1.

★ Host query command:

Slave Address	01H	Slave address
Function	03H	function code
Starting Address Hi	00H	Start register address is 8 bits high
Starting Address Lo	00H	Start register address is lower 8 bits
No. of Registers Hi	00H	The upper 8 bits of the number of registers
No. of Registers Lo	01H	The lower 8 bits of the number of registers
CRC Check Lo	84H	CRC check code is lower 8 bits
CRC Check Hi	0AH	CRC check code is 8 digits high

★Slave response:

Slave Address	01H	Slave address
Function	03H	function code
Byte Count	02H	4 bytes in length
Data Hi	02H	The noise is: 0x0258, which is 60.0dB
Data Lo	58H	
CRC Check Lo	B8H	CRC check code is lower 8 bits
CRC Check Hi	DEH	CRC check code is 8 digits high

Example of 06H function code: modify the baud rate (this example is modified to 57600bps)

★ Host query command:

Slave Address	01H	Slave address
Function	06H	function code
Starting Address Hi	00H	The baud rate holding register address is 0014H
Starting Address Lo	14H	The baud rate holding register address is 0014H
Data Hi	02H	When the baud rate is 57600 bps, the value of the register is 576, which is 0x0240.
Data Lo	40H	When the baud rate is 57600 bps, the value of the register is 576, which is 0x0240.
CRC Check Lo	C9H	CRC check code is lower 8 bits
CRC Check Hi	5EH	CRC check code is 8 digits high

★Slave response:

Slave Address	01H	Slave address
Function	06H	function code
Starting Address Hi	00H	The baud rate holding register address is 0014H
Starting Address Lo	14H	The baud rate holding register address is 0014H
Data Hi	02H	When the baud rate is 57600 bps, the value of the register is 576, which is 0x0240.
Data Lo	40H	When the baud rate is 57600 bps, the value of the register is 576, which is 0x0240.

CRC Check Lo	C9H	CRC check code is lower 8 bits
CRC Check Hi	5EH	CRC check code is 8 digits high