



# SONBEST SR8856B Infrared Temperature and Noise Display Instrument User Manual

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**SONBEST SR8856B Infrared Temperature and Noise Display Instrument**



## SR8856B Infrared Temperature and Noise Display Instrument

The SR8856B is an advanced instrument for measuring temperature and noise. It uses the standard RS485 bus MODBUS-RTU protocol, making it easy to connect to PLCDCS and other instruments or systems for monitoring temperature and noise levels. The device is equipped with a high-precision sensing core and related devices to ensure high reliability and excellent long-term stability. It can be customized with various output methods such as RS232, RS485, CAN, 4-20mA, DC0~5V10V, ZIGBEE, Lora, WIFI, GPRS, etc.

### Technical Specifications

Brand	Temperature Measurement Range	Temperature Measurement Accuracy	Repeat Measurement Accuracy	Optical Resolution	Spectral Range	Response Time	Emissivity	Noise Range	Noise Accuracy	Communication Interface	Default Baud Rate	Power Storage	Max Records	Running Temperature	Working Humidity
SR8856B	Customizable	Customizable	Customizable	Customizable	Customizable	Customizable	Customizable	Customizable	Customizable	RS232, RS485, CAN, 4-20mA, DC0~5V10V, ZIGBEE, Lora, WIFI, GPRS	9600 (module or NON-Recorder), 115200 (data recorder)	Customizable	Customizable	Customizable	Customizable

### Product Usage Instructions

1. Connect the device to the system or instrument to be monitored using the appropriate communication interface

(RS232, RS485, CAN, 4-20mA, DC0~5V10V, ZIGBEE, Lora, WIFI, GPRS).

2. Ensure that the device is powered on and the default device address is set to 1.
3. Use the software provided to test and monitor the temperature and noise levels.
4. To read data, send a hexadecimal inquiry frame with function code 0x03. The device will respond with data in hexadecimal format.

Convert the data to decimal values and apply any necessary magnification to obtain the real values.

## Wiring Instructions

If the product has no leads, wire the wires as shown in the figure. The core color is for reference.

## Communication Protocol

The product uses RS485 MODBUS-RTU standard protocol format. All operation or reply commands are hexadecimal data. The default device address is 1 when the device leaves the factory, and the module or NON-Recorder default baud rate is 9600,8,n,1, but data recorder default baud rate is 115200.

## Application Solution

The SR8856B is suitable for a wide range of applications including industrial temperature monitoring, noise level monitoring, and more.

## Product List

The product list includes the SR8856B Infrared Temperature and Noise Display Instrument and any necessary accessories or software.

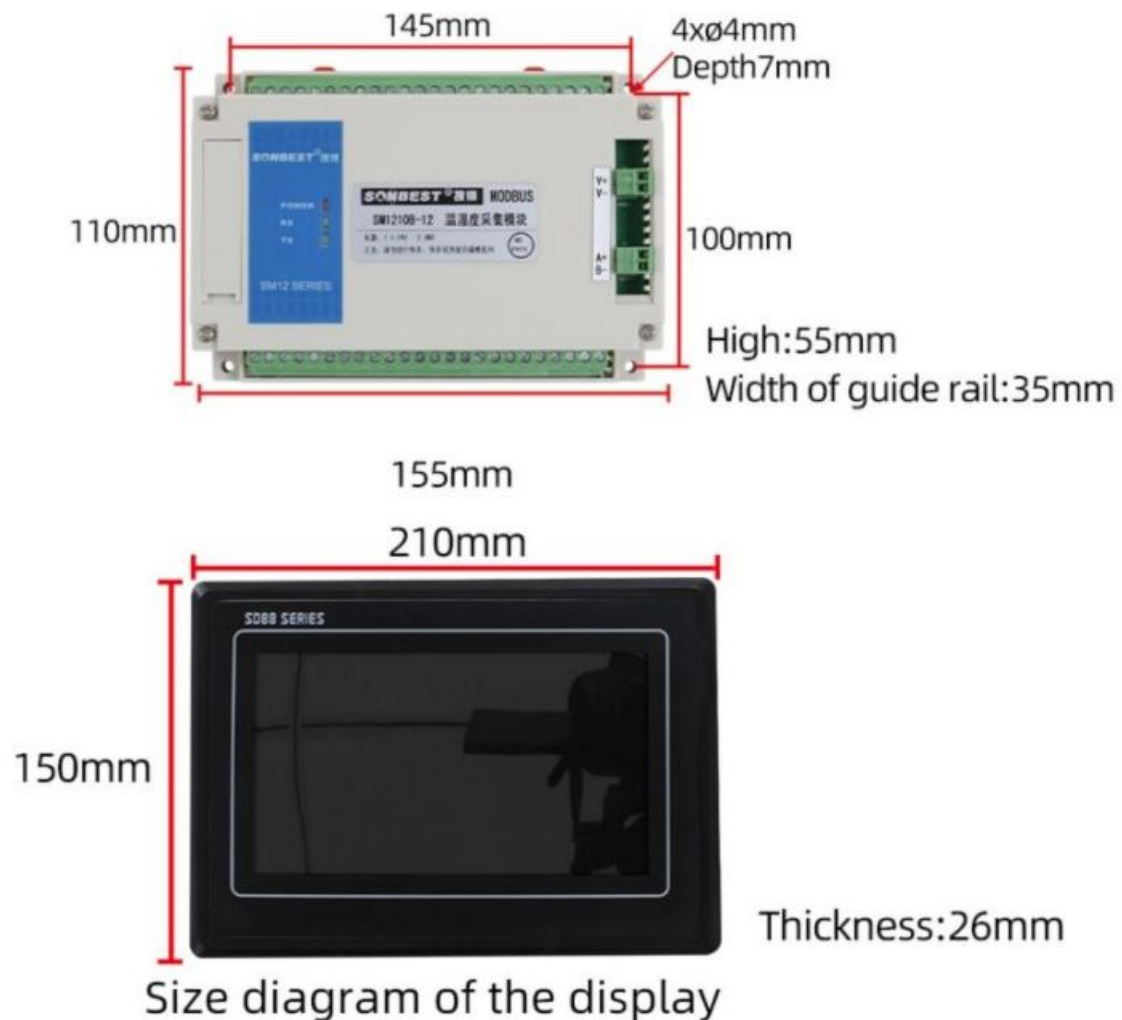
SR8856B using the standard RS485 bus MODBUS-RTU protocol,easy access to PLC DCS and other instruments or systems for monitoring temperature,temperature,temperature,noise state quantities.The internal use of high-precision sensing core and related devices to ensure high reliability and excellent long-term stability,can be customized RS232,RS485,CAN,4-20mA,DC0~5V\10V,ZIGBEE,Lora,WIFI,GPRS and other output methods.

## Technical Parameters

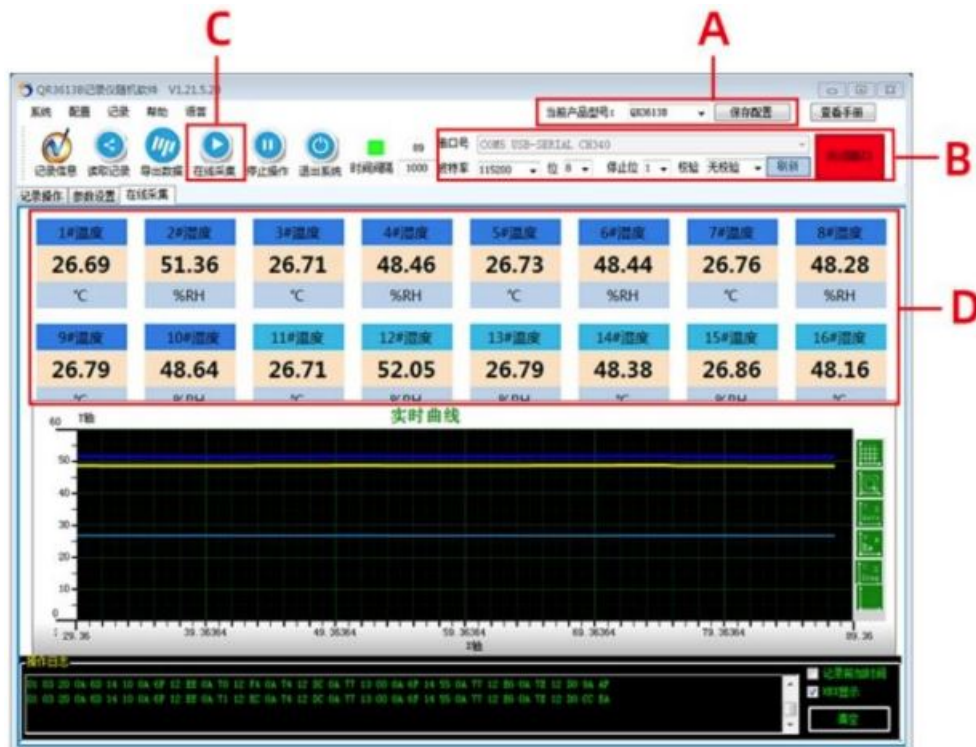
Technical parameter	Parameter value
Brand	SONBEST
Temperature measurement range	0~+300°C (Max 380°C)
Temperature measurement accuracy	±1 or %1 take the maximum value (maximum ± 3°C)
Repeat measurement accuracy	±0.5 or %0.5 take the maximum value (maximum ±2°C)
Optical Resolution	1.6:1
Spectral range	18-14um
Response time	100ms

Emissivity	0.96
Temperature measurement range	0~+300°C (Max 380°C)
Temperature measurement accuracy	±1 or %1 take the maximum value (maximum ± 3°C)
Repeat measurement accuracy	±0.5 or %0.5 take the maximum value (maximum ±2°C)
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Temperature measurement accuracy	±1 or %1 take the maximum value (maximum ± 3°C)
Repeat measurement accuracy	±0.5 or %0.5 take the maximum value (maximum ±2°C)
Optical Resolution	1.6:1
Spectral range	18-14um
Response time	100ms
Emissivity	0.96
Noise range	30~130dB
Noise accuracy	±3%
Communication Interface	RS485
Default baud rate	9600 8 n 1
Power	DC6~24V 1A
Storage	128M
Max Records	500000
Running temperature	-30~85°C
Working humidity	5%RH~90%RH

## Product Size

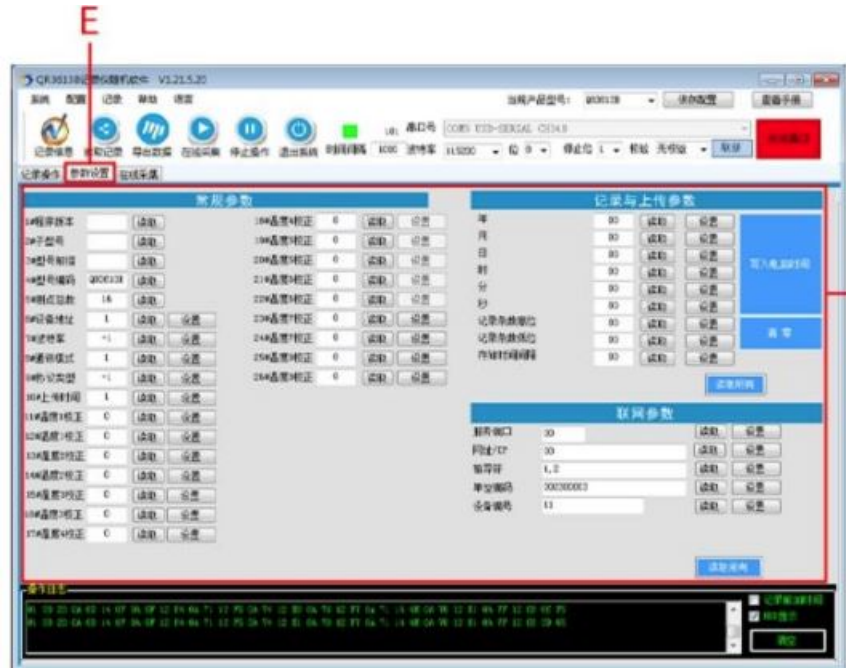


software to test



- A: OPEN THE SOFTWARE INTO THE MAIN INTERFACE, SELECT THE CORRESPONDING PRODUCT MODEL TO BUY, SELECT THE END OF THE SAVE SETTINGS, IN CASE THE NEXT OPEN AFTER THE NEED TO RE-SELECT

- B: USE THE USB CONVERTER TO INSERT THE COMPUTER USB 2.0 INTERFACE, WILL AUTOMATICALLY INSTALL THE DRIVER, SUCH AS INSTALLATION FAILURE, CAN BE IN THE DRIVER WIZARD SOFTWARE TO INSTALL, ACCESS THE COMPUTER, CHOOSE SERIAL PORT
- PORT: USB-SERIAL CH340(COM5) , SET GOOD BAUD RATE CLICK TO OPEN THE SERIAL PORT TO COMPLETE THE CONNECTION.
- C D:OPEN THE SERIAL PORT, CLICK ON-LINE ACQUISITION (C) , YOU CAN SEE THE REAL-TIME MEASUREMENT DATA (D) .



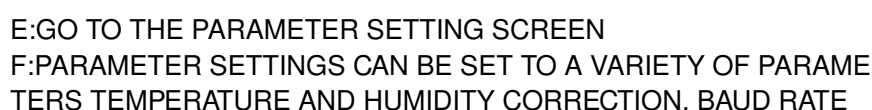
E:GO TO THE PARAMETER SETTING SCREEN

F:PARAMETER SETTINGS CAN BE SET TO A VARIETY OF PARAMETERS TEMPERATURE AND HUMIDITY CORRECTION, BAUD RATE UPLOAD TIME AND OTHER PARAMETERS THE RIGHT PARAMETER CAN CLICK ON THE 'READ ALL' RECORDER SET PARAMETERSO

### Wiring instructions

In the case of broken wires, wire the wires as shown in the figure. If the product itself has no leads, the core color is for reference.

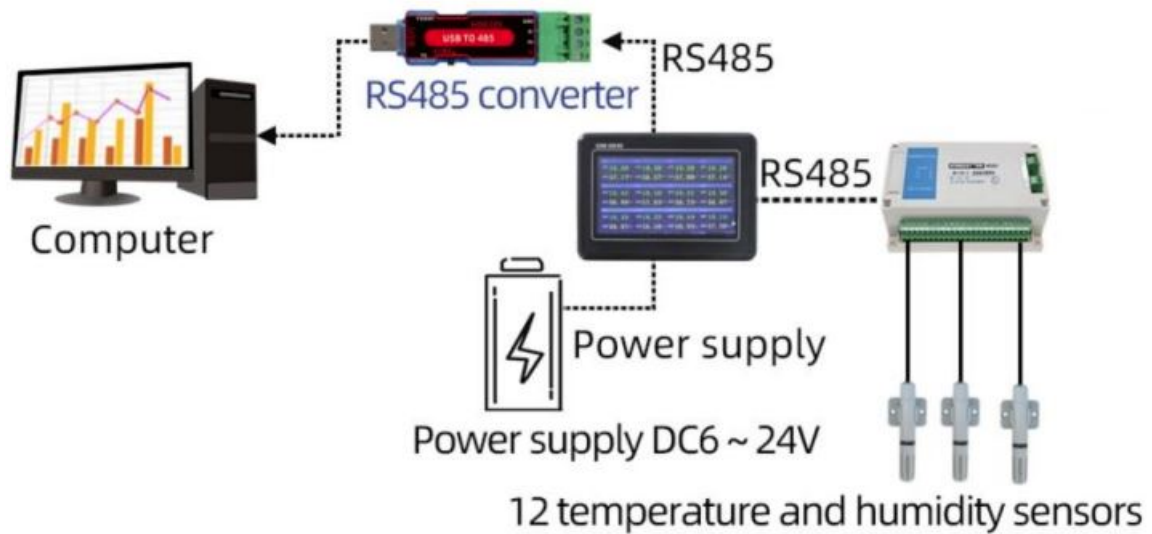
### How to use software?



UPdAD TIME AND OTHER PARAMETERS, THE RIGHT PARAMETE  
R CAN CLICK ON THE 'READ ALL' RECORDER SET PARAMETERSO

## Application solution

### Basic application scheme



Temperature and humidity color screen recorder can be widely used in grain storage, heat source heat pump, machine shop, library, museum, Greenhouse, archives and other indoor measurement fields



### Product List



12-channel temperature and humidity color screen recorder



Warm Reminder card



Certificate

## Communication Protocol

The product uses RS485 MODBUS-RTU standard protocol format, all operation or reply commands are hexadecimal data. The default device address is 1 when the device leaves the factory, and the module or NON-Recorder default baud rate is 9600,8,n,1 ,but data recorder default baud rate is 115200 .

### Read data (function code 0x03)

Inquiry frame (hexadecimal), sending example: query 1 data of 1# device, the upper computer send the command: 01 03 00 00 00 04 44 09 .

Address	Function Code	Start Address	Data Length	Check Code
01	03	00 00	00 04	44 09

For the correct query frame, the device will respond with data: 01 03 08 00 7C 00 00 00 00 00 00 28 10 , response format

Address	Function Code	Length	Data 1	Data 2	Data 3	Data 4	Check Code
01	03	08	00 79	00 7A	00 7B	00 7C	28 10

Data description: The data in the command is hexadecimal, take data 1 as an example, 00 79 is converted to decimal value as 121, assuming the data magnification is 100, then the real value is  $121/100=1.21$ , Others and so on.

## Common data address table

Configuration Address	Register Address	Register Description	Data Type	Value Range
40001	00 00	temperature	Read Only	0~65535
40002	00 01	temperature	Read Only	0~65535
40003	00 02	temperature	Read Only	0~65535
40004	00 03	noise	Read Only	0~65535
40101	00 64	Model Code	Read/Write	0~65535
40102	00 65	total number of measuring points	read/write	1~20
40103	00 66	device address	read/write	1~249
40104	00 67	baud rate	read/write	0~6
40105	00 68	communication mode	read/write	1~4
40106	00 69	protocol type	read/write	1~10

## Read and modify device address

### Read or query device address

If you don't know the current device address and there is only one device on the bus, you can query the device address through the command FA 03 00 66 00 01 71 9E

Device Address	Function Code	Start Address	Data Length	Check Code
FA	03	00 66	00 01	71 9E

FA means 250 is the general address, when you don't know the address, you can use 250 to get the real device address, 00 66 is the device address register

For the correct query command, the device will respond, for example, the response data is: 01 03 02 00 01 79 84, and its format parsing is shown in the following table

Device Address	Function Code	Start Address	Model Code	Check Code
01	03	02	00 01	79 84

In the response data, the first byte 01 represents the real address of the current device.

### Change device address

For example, if the current device address is 1 and we want to change it to 02, the command is: 01 06 00 66 00 02 E8 14

Device Address	Function Code	Register Address	Target Address	Check Code
01	06	00 66	00 02	E8 14

After the change is successful, the device will return the information: 02 06 00 66 00 02 E8 27 , and its format analysis is shown in the following table:

Device Address	Function Code	Register Address	Target Address	Check Code
02	06	00 66	00 02	E8 27

In the response data, after the modification is successful, the first byte is the new device address.

Generally, after the device address is changed, it will take effect immediately. At this time, the user needs to change the query command of his software accordingly

## Read and modify baud rate

### Read baud rate

The default factory baud rate of the device is 9600. If you need to change it, you can change it according to the following table and the corresponding communication protocol. For example, to read the baud rate ID of the current device, the command is: 01 03 00 67 00 01 35 D5 , the format is parsed as follows

Device Address	Function Code	Start Address	Data Length	Check Code
01	03	00 67	00 01	35 D5

Read the baud rate code of the current device. Baud rate code: 1 is 2400; 2 is 4800; 3 is 9600; 4 is

19200; 5 is 38400; 6 is 115200.

For the correct query command, the device will respond, for example, the response data is: 01 03 02 00 03 F8 45, and its format analysis is shown in the following table:

Device Address	Function Code	Data Length	Baud Rate Code	Check Code
01	03	02	00 03	F8 45

According to the baud rate code, 03 is 9600, that is, the baud rate of the current device is 9600.

### Change the baud rate

For example, change the baud rate from 9600 to 38400, that is, change the code from 3 to 5, the command is: 01 06 00 67 00 05 F8 16 .

Device Address	Function Code	Register Address	Target Baud Rate	Check Code
01	06	00 67	00 05	F8 16

Change the baud rate from 9600 to 38400, that is, change the code from 3 to 5. The new baud rate will take effect immediately, and the device will lose response at this time, and the baud rate of the device needs to be checked accordingly Modified

## Read and modify correction value

### Read correction value

When there is an error between the data and the reference standard, we can reduce the display error by adjusting the correction value. The correction difference can be modified in a range of plus or minus 1000, that is, the value range is 0-1000 or 64535 -65535. For example, when the displayed value is too small by 100, we can correct it by adding 100. The command is: 01 03 00 6B 00 01 F5 D6 . In the command, 100 is hexadecimal 0x64 ;If you need to reduce it, you can set a negative value, such as -100,the corresponding hexadecimal value is FF 9C, the calculation method is 100 -65535=65435, and then converted to hexadecimal, it is 0x FF 9C. Device The correction value starts from 00 6B. We take the first parameter as an example to illustrate. When there are multiple parameters, the correction value is read and modified in the same way

Device Address	Function Code	Start Address	Data Length	Check Code
01	03	00 6B	00 01	F5 D6

For the correct query command, the device will respond, for example, the response data is: 01 03 02 00 64 B9 AF, and its format parsing is shown in the following table

Device Address	Function Code	Data Length	Correction Value	Check Code
01	03	02	00 64	B9 AF

In the response data, the first byte 01 represents the real address of the current device, and 00 6B is the first state correction value register. If the device has multiple parameters, other parameters operate in the same way as this The same, generally temperature and humidity have this parameter, and lighting generally does not have this parameter.

### Change the correction value

For example, if the current state is too small, we want to add 1 to its real value, and add 100 to the current value. The correction operation command is: 01 06 00 6B 00 64 F9 FD .

Device Address	Function Code	Register Address	Target Address	Check Code
01	06	00 6B	00 64	F9 FD

After the operation is successful, the device will return the information: 01 06 00 6B 00 64 F9 FD , after the successful change, the parameters will take effect immediately.


## Disclaimer

This document provides all information about the product, does not grant any license to intellectual property, does not express or imply, and prohibits any other means of granting any intellectual property rights, such as the statement of sales terms and conditions of this product, other issues. No liability is assumed. Furthermore, our company makes no warranties, express or implied, regarding the sale and use of this product, including the suitability for the specific use of the product, the marketability or the infringement liability for any patent, copyright or other intellectual property rights, etc. Product specifications and product descriptions may be modified at any time without notice.

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## Documents / Resources

	<a href="#">SONBEST SR8856B Infrared Temperature and Noise Display Instrument</a> [pdf] User Manual SR8856B, SR8856B Infrared Temperature and Noise Display Instrument, Infrared Temperature and Noise Display Instrument, Temperature and Noise Display Instrument, Noise Display Instrument, Display Display Instrument
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## References

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