

SC7261B

User Manual

File Version: V21.12.10



SC7261B using the standard RS485 bus MODBUS-RTU protocol, easy access to PLC, DCS and other instruments or systems for monitoring DC5V voltage 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

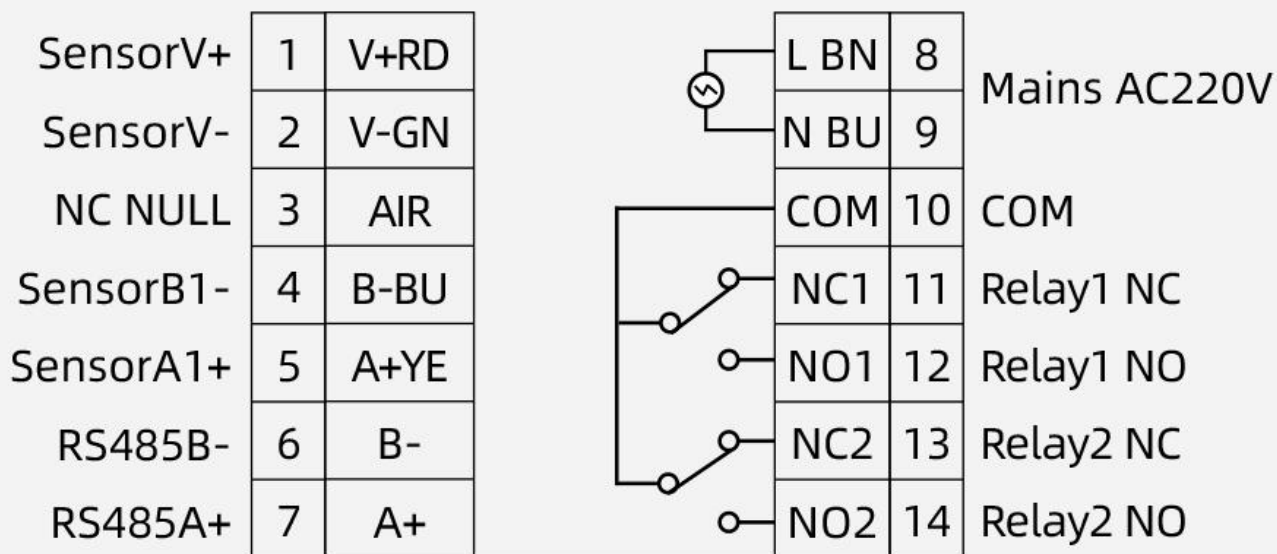
Technical parameter	Parameter value
Brand	SONBEST
Input Signal	DC0~5V voltage
Communication Interface	RS485
Default baud rate	9600 8 n 1
Power	AC185~265V 1A
Running temperature	-40~80°C
Working humidity	5%RH~90%RH

How to wiring?



WIRING METHOD IS SIMPLE AND CLEAR

The wiring is simple and easy to understand, no complicated operation is required



Left sensor wiring

	(1)RD	Sensor V+
	(2)GN	Sensor V-
	(4)GN	Sensor B1-
	(5)YE	Sensor A1+

Right side power supply AC220V wiring

	(8)BN	L BN
	(9)GN	N GN

HIGH SENSITIVITY INDUSTRIAL DESIGN

Every detail has undergone many manual tests and repeated revisions, just to bring you a better experience, and carefully create high-quality products

LED DISPLAY

Clear display
Fast response



QUALITY LEADS

Use high-quality signal lines
Dust and corrosion protection



SET BUTTON

Used for threshold setting
and mode change

BUILT-IN IMPORTED CHIP

Imported illuminance device
Digital, better accuracy



DETAILED BUTTON EXPLANATION

Standard MODBUS-RTU protocol, the default baud rate is 9600, parity bit, 8 data bits, software can change parameters such as threshold, and real-time query of illuminance data through RS485



» Use the selection key when setting

^ Up key

v Down key

SET Set key

The fourth page is the mode setting
Mode 1: Over the upper limit alarm
Mode 2: Alarm below the lower limit
Mode 3: Over/under limit action

※Illuminance display value x1000=current value

As shown in figure 3.63, it means that the current light value is 3630LUX

Key operation

◆ Click "Set" once to enter the upper threshold setting

Press "»" to select the position and press "Λ" and "V" to adjust the value.

In modes 1 and 3, when the value is greater than the upper threshold, relay 1 will act.

Upper threshold: default 50000,
maximum 100000

◆ Click "Set" twice to enter the lower limit Threshold setting

Press "»" to select the position and press "Λ" and "V" to adjust the value.

In modes 2 and 3, when the value is lower than the lower limit threshold, relay 2 will act.

Lower limit threshold: default 0,
maximum 100000

◆ Click "SET" three times to enter the control hysteresis setting

Press "»" to select the position and press "Λ" and "V" to adjust the value.

The default value is 1000
and the maximum is 100000.

◆ Click "SET" four times to enter the control mode setting

Press "»" to select the position and press "Λ" and "V" to adjust the value.

Mode 1: Action above the upper threshold

Mode 2: Action following the lower threshold

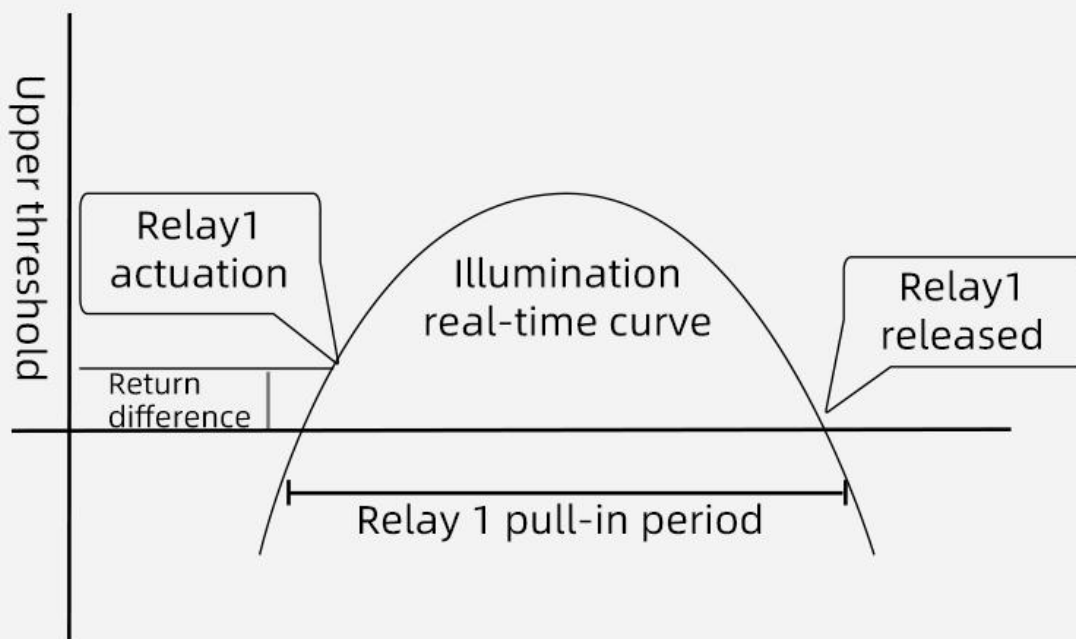
Mode 3: Action above the upper limit / Action below the lower limit..

Application solution



Mode 1: Action above the upper threshold

Only relay 1 is in use



Turning on and off the light control device

Relay 1 pull-in operating conditions:

measured value > upper limit threshold + return difference

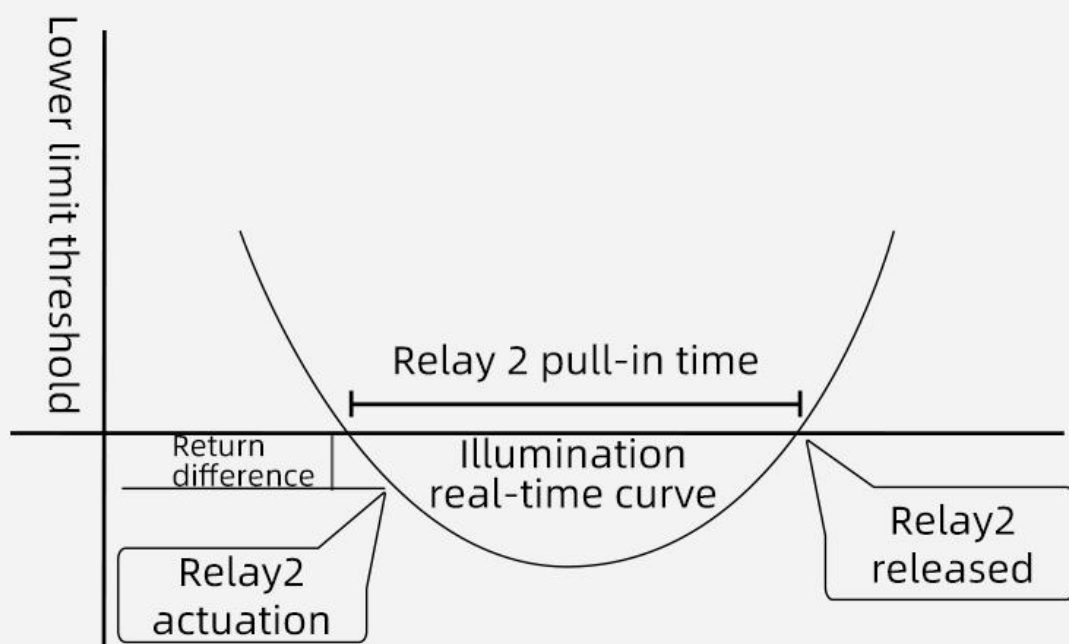
Relay 1 release operating conditions:

measured value < upper limit threshold - return difference

※As shown in the figure above, when the measured value is higher than the upper threshold plus the difference, the controller's internal relay Device 1 pulls in and opens the awning device; when the light level drops to the upper threshold minus the difference, Relay 1 then opens and closes the awning.

Mode 2: Action below the lower limit threshold

Only relay 2 is in use



Turning on and off the light control device

Relay 2 pull-in operating conditions:

measured value < lower limit threshold - return difference

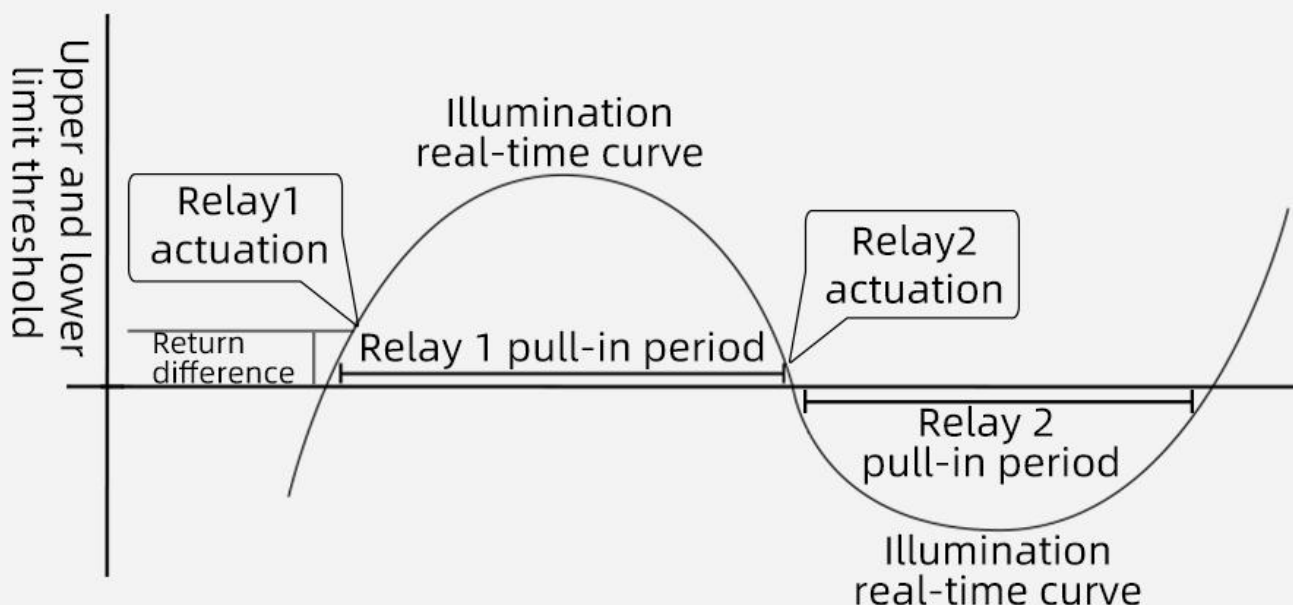
Relay 2 release operating conditions:

measured value > lower limit threshold + return difference

※As shown above, when the measured value is lower than the lower threshold minus the difference, the controller's internal relayDevice 2 pulls in and closes the awning device; when the light level rises to the lower threshold plus the difference, Then relay 2 opens and the awning opens.

Mode 3: Over / under threshold action

Above the upper threshold, relay 1 operates, and below the lower threshold, relay 2 operates. The motor that is usually used to control the shading device is positive and negative.



Turning on and off the light control device

Relay 1 pull-in conditions:

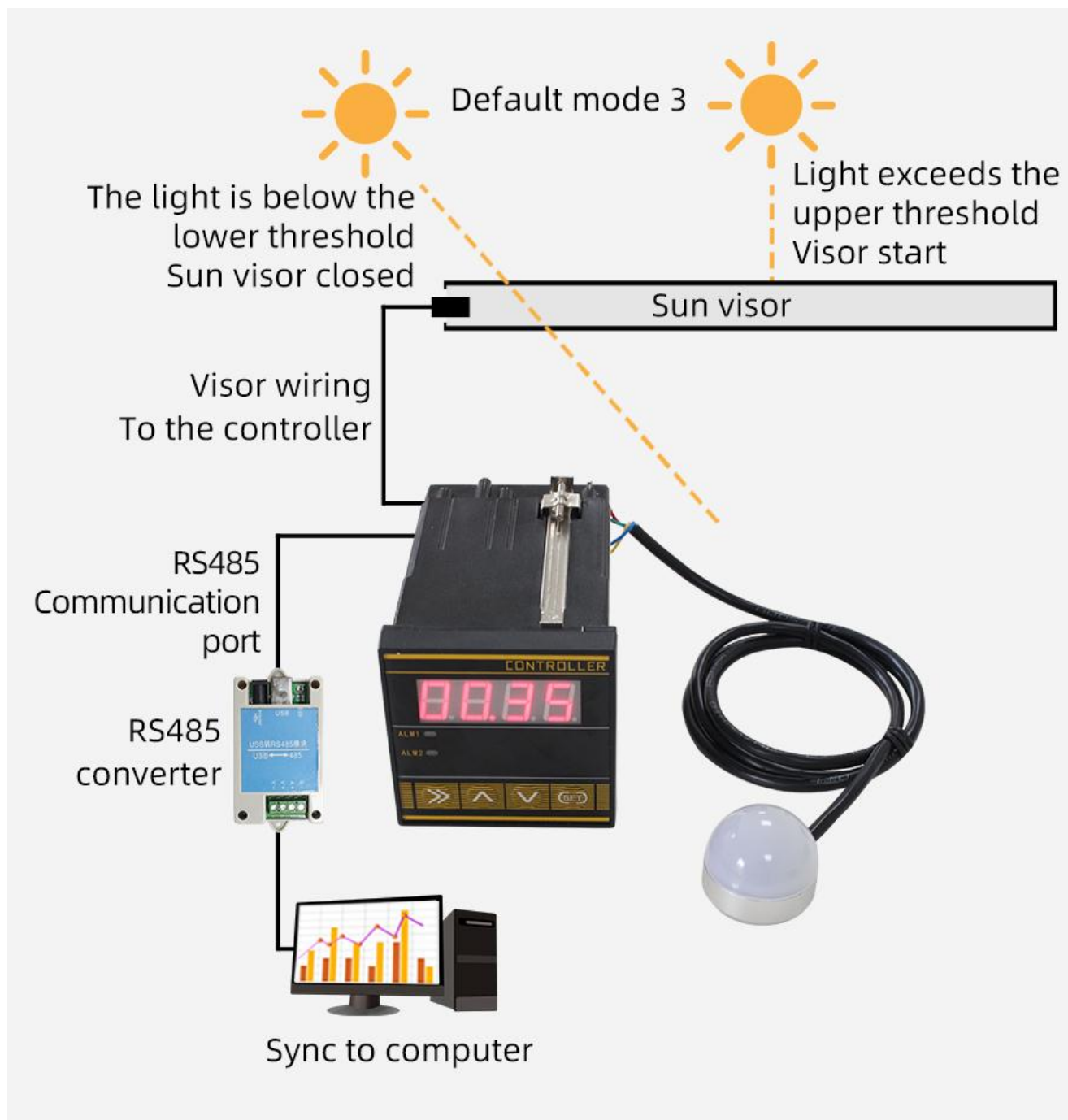
measured value > upper limit threshold + return difference

Relay 2 pull-in conditions:

measured value < lower limit threshold - return difference

※As the picture shows, When the measured value is above the upper threshold + return difference, Controller internal relay 1 pull-in, Control the awning motor forward to activate the awning; After the start, When the value is less than the lower threshold - return difference, Relay 2 pull-in, Control the awning motor to reverse to close the awning.

How to use?





■ Flower farming —

Flower farming requires light management

According to the light needs of plants
To cooperate with the sensor's control of light intensity

— Greenhouse ■

Effective management
with sensors
Create a good light
environment for crops
Promote better photosynthesis



■ Building —

Equipment used to measure
the level of light intensity
Under certain circumstances
Need strict illumination
requirements

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 is shipped, the default baud rate is 9600, 8, n, 1

1. Read Data (Function id 0x03)

Inquiry frame (hexadecimal), sending example: Query 1# device 1 data, the host computer sends the command: 01 03 00 00 00 01 84 0A .

Device ID	Function id	Start Address	Data Length	CRC16
01	03	00 00	00 01	84 0A

For the correct query frame, the device will respond with data: 01 03 02 00 79 79 A6 , the response format is parsed as follows:

Device ID	Function id	Data Length	Data 1	Check Code
01	03	02	00 79	79 A6

Data Description: The data in the command is hexadecimal. Take data 1 as an example. 00 79 is converted to a decimal value of 121. If the data magnification is 100, the actual value is $121/100=1.21$. Others and so on.

2. Data Address Table

Address	Start Address	Description	Data type	Value range
40001	00 00	DC5Vvoltage	Read Only	0~65535
40101	00 64	model code	read/write	0~65535
40102	00 65	total points	read/write	1~20
40103	00 66	Device ID	read/write	1~249
40104	00 67	baud rate	read/write	0~6
40105	00 68	mode	read/write	1~4
40106	00 69	protocol	read/write	1~10

3 read and modify device address

(1) 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 use the command FA 03 00 64 00 02 90 5F Query device address.

Device ID	Function id	Start Address	Data Length	CRC16
FA	03	00 64	00 02	90 5F

FA is 250 for the general address. When you don't know the address, you can use 250 to get the real device address, 00 64 is the device model register.

For the correct query command, the device will respond, for example the response data is: 01 03 02 07 12 3A 79, the format of which is as shown in the following table:

Device ID	Function id	Start Address	Model Code	CRC16
01	03	02	55 3C 00 01	3A 79

Response should be in the data, the first byte 01 indicates that the real address of the current device is, 55 3C converted to decimal 20182 indicates that the current device main model is 21820, the last two bytes 00 01 Indicates that the device has a status quantity.

(2)Change device address

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

Device ID	Function id	Start Address	Destination	CRC16
01	06	00 66	00 02	E8 14

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

Device ID	Function id	Start Address	Destination	CRC16
01	06	00 66	00 02	E8 27

Response should be in the data, after the modification is successful, the first byte is the new device address. After the general device address is changed, it will take effect immediately. At this time, the user needs to change the query command of the software at the same time.

4 Read and Modify Baud Rate



(1) Read baud rate

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

Device ID	Function id	Start Address	Data Length	CRC16
01	03	00 67	00 01	35 D5

Read the baud rate encoding of the current device. Baud rate encoding: 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, the format of which is as shown in the following table:

Device ID	Function id	Data Length	Rate ID	CRC16
01	03	02	00 03	F8 45

coded according to baud rate, 03 is 9600, ie the current device has a baud rate of 9600.

(2)Change the baud rate

For example, changing the baud rate from 9600 to 38400, ie changing the code from 3 to 5, the command is: 01 06 00 67 00 05 F8 1601 03 00 66 00 01 64 15 .

Device ID	Function id	Start Address	Target Baud Rate	CRC16
01	03	00 66	00 01	64 15

Change the baud rate from 9600 to 38400, changing the code from 3 to 5. The new baud rate will take effect immediately, at which point the device will lose its response and the baud rate of the device should be queried accordingly. Modified.

5 Read Correction Value

(1) 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 to be plus or minus 1000, that is, the value range is 0-1000 or 64535 -65535. For example, when the display value is too small, we can correct it by adding 100. The command is: 01 03 00 6B 00 01 F5 D6 . In the command 100 is hex 0x64 If you need to reduce, you can set a negative value, such as -100, corresponding to the hexadecimal value of FF 9C, which is calculated as 100-65535=65435, and then converted to hexadecimal to 0x FF 9C. The correction value starts from 00 6B. We take the first parameter as an example. The correction value is read and modified in the same way for multiple parameters.

Device ID	Function id	Start Address	Data Length	CRC16
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, the format of which is as shown in the following table:

Device ID	Function id	Data Length	Data value	CRC16
01	03	02	00 64	B9 AF

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

(2)Change correction value

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

Device ID	Function id	Start Address	Destination	CRC16
01	06	00 6B	00 64	F9 FD

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

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.

Contact Us

Company: Shanghai Sonbest Industrial Co., Ltd

Address: Building 8, No. 215 North east road, Baoshan District, Shanghai, China

Web: <http://www.sonbest.com>

Web: <http://www.sonbus.com>

SKYPE: soobuu

Email: sale@sonbest.com

Tel: 86-021-51083595 / 66862055 / 66862075 / 66861077

