SC7260B

RS485 interface with communication function illuminance controller

User Manual

File Version: V23.6.25

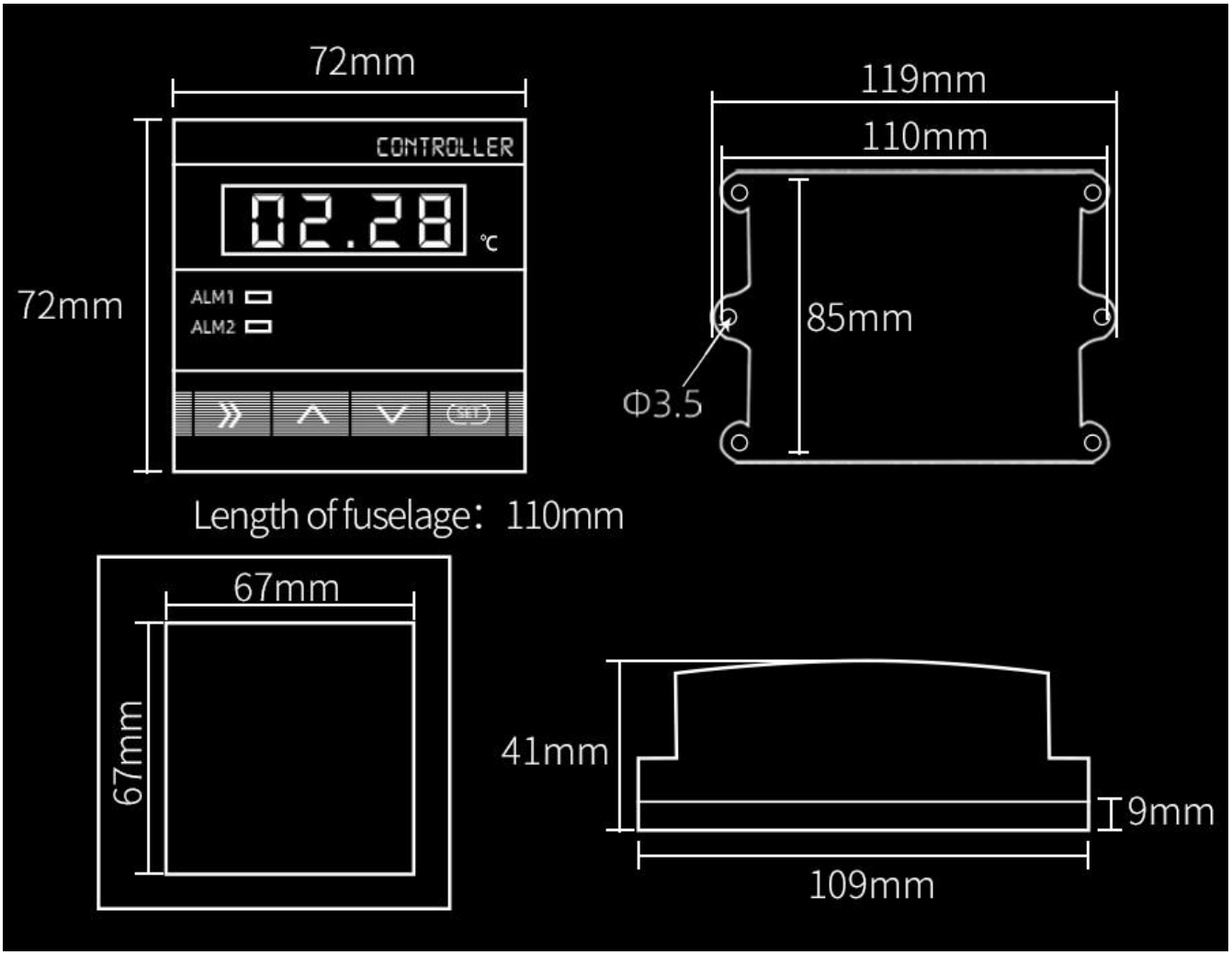
SC7260B using the standard RS485 bus MODBUS-RTU protocol,easy access to PLC，DCS and other instruments or systems for monitoring 光照 state quantities.The internal use of high-precision sensing core and related devices to ensure high reliability and excellent long-term stability,can be

customized RS232,RS485,CAN,4-20mA,DC0~5V\10V,ZIGBEE,Lora,WIFI,GPRS and other output methods.

Technical Parameters

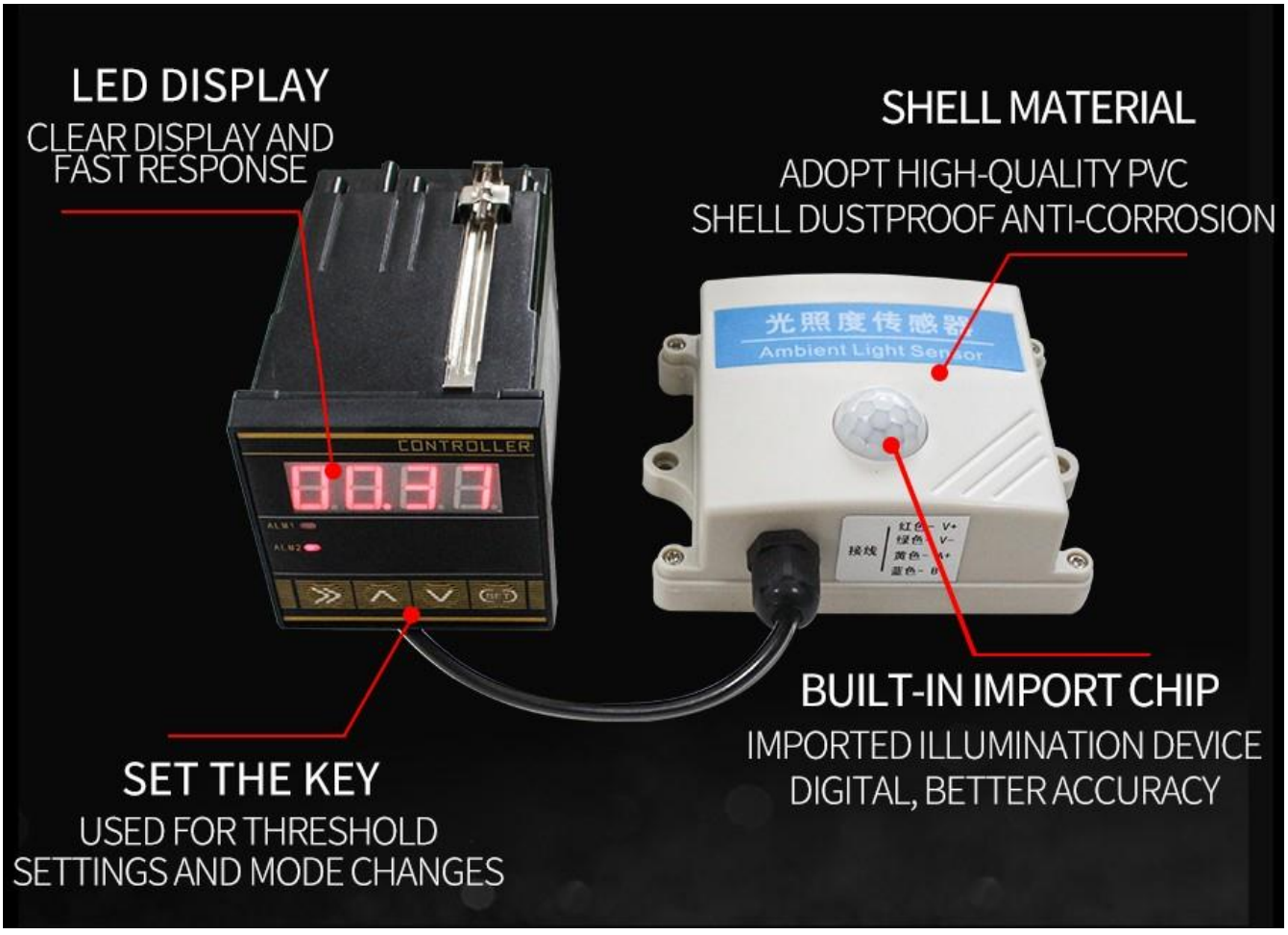
Technical parameter	Parameter value
Brand	SONBEST
Illuminance measuring range	0~65535Lux
Illuminance allow deviation	±7%
Repeatability test	±5%
Illuminance detection chip	Import digital
Wavelength range	380nm~730nm
Communication Interface	RS485
Default baud rate	9600 8 n 1
Power	AC185~265V 1A
Control mode	Relay
carrying capacity	10A 220VAC
Running temperature	-30~85℃
Working humidity	5%RH~90%RH

Product Size



High sensitivity, industrial grade design

EVERY OUTER DETAIL HAS GONE THROUGH MANY TIMES MANUAL TESTING, REPEATEDLY MODIFIED, ONLY TO BRING YOU A BETTER USE EXPERIENCE, CAREFULLY BUILD HIGH-QUALITY PRODUCTS



Key details, quick start

STANDARD MODBUS-RTU PROTOCOL, THE DEFAULT BAUD RATE IS 9600, IN-VALID, 8-BIT DATA BITS, SOFTWARE CAN CHANGE THE THRESHOLD AND OTHER PARAMETERS, THROUGH RS485 CAN QUERY REAL-TIME ILLUMINATION DATA.

» : Use the select key when setting

^ : Up Key

v : Down Key

SET : Set Key

Page 4 sets the alarm
mode 1: Over-limit Alarm
Mode 2: under-limit alarm
mode 3: over/under-limit action

※Illumination display value X1000 = current value as shown in figure 3.63, indicating the current illumination value of 3630 lux

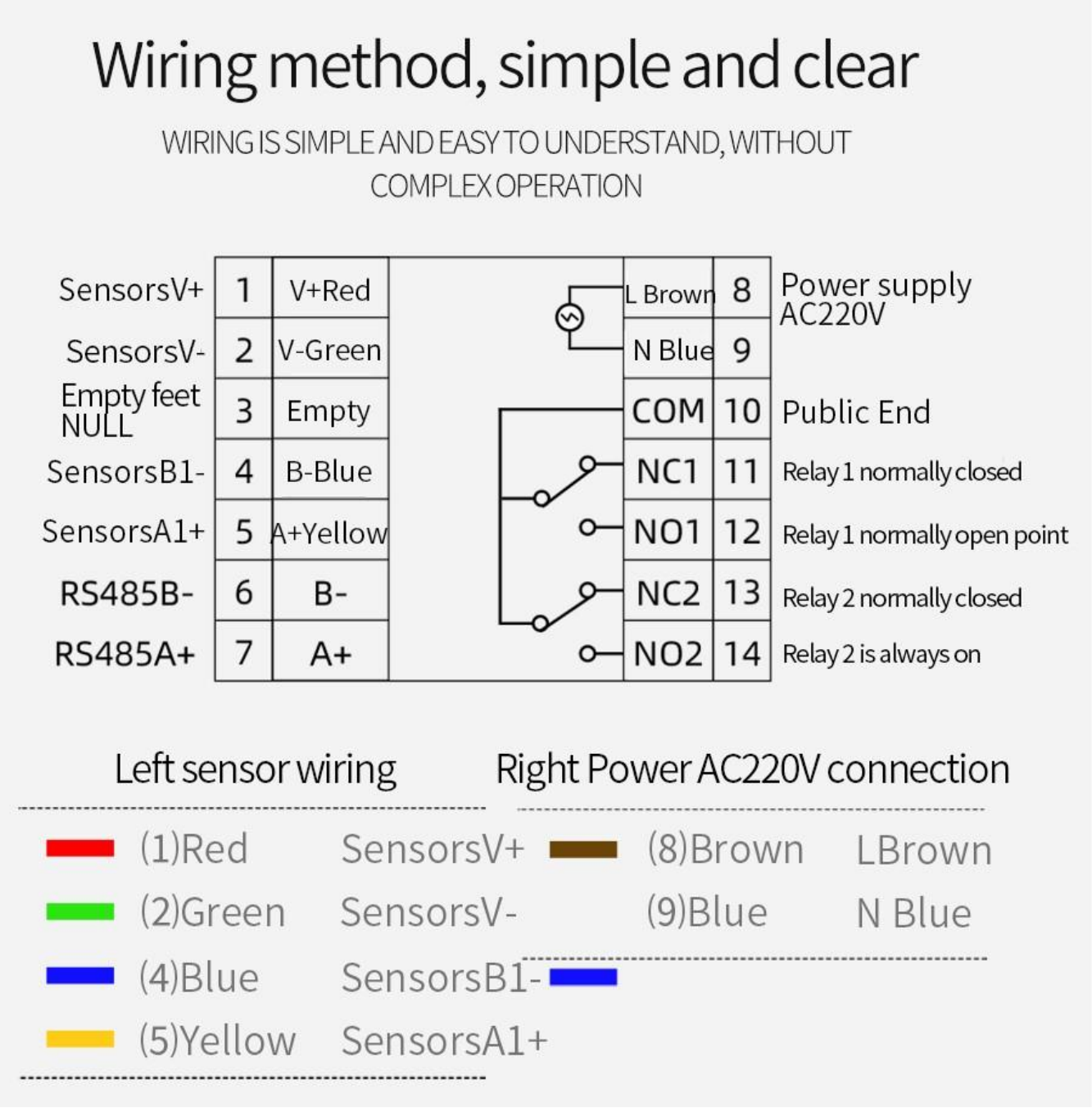
Key operation

◆Press SET to enter upper limit threshold settings press" " to select the position, press" " " V" to adjust the value mode 1,3, when the value is greater than the upper limit threshold relay 1 action upper limit threshold: the default value of 50000, the maximum value of 65000

◆Press SET twice to enter the lower limit threshold settings press" " to select the position, press" !" " " to adjust the numerical value mode 2,3, when the value is less than the lower limit threshold relay 2 action lower limit threshold: default 0, maximum 65000

◆Press SET three times to enter the control return settings press" " to select the position, press" !" " " " " to adjust the value of the default return difference 1000, the maximum 60000

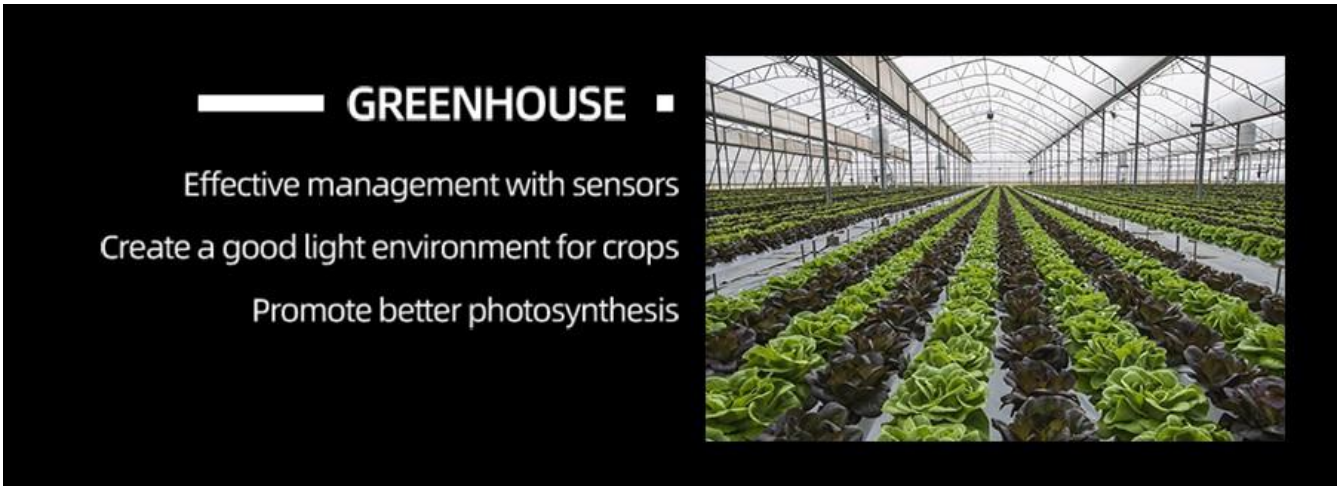
◆Press four sets to enter the control mode, press" " to select the position, press" " " " to adjust the numerical value mode 1, above the upper threshold action mode 2, below the lower threshold action mode 3, above the upper threshold action/below the lower threshold action

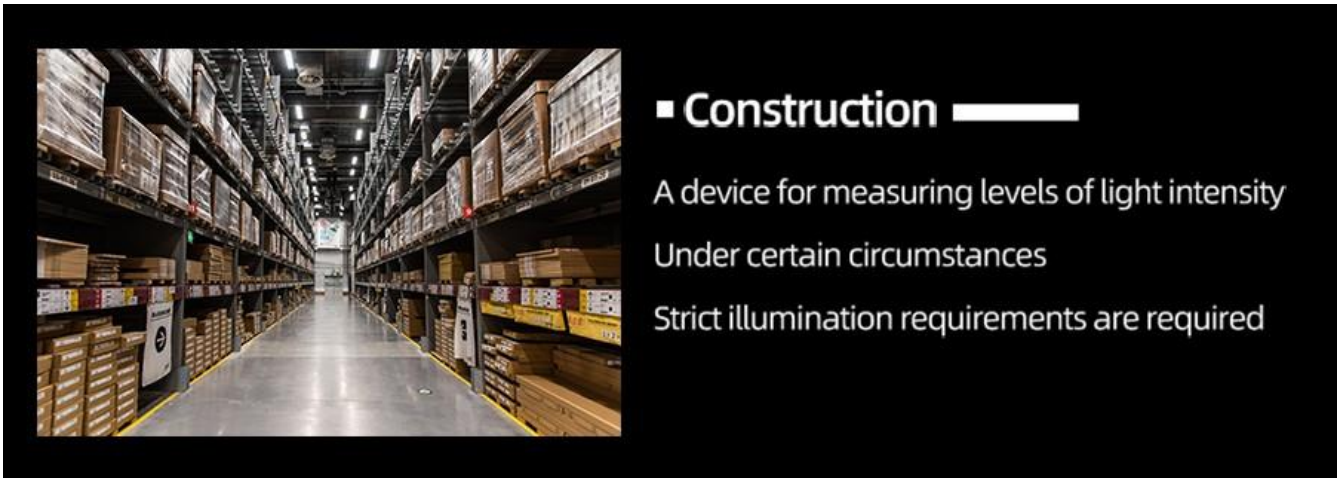


Wiring instructions

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?

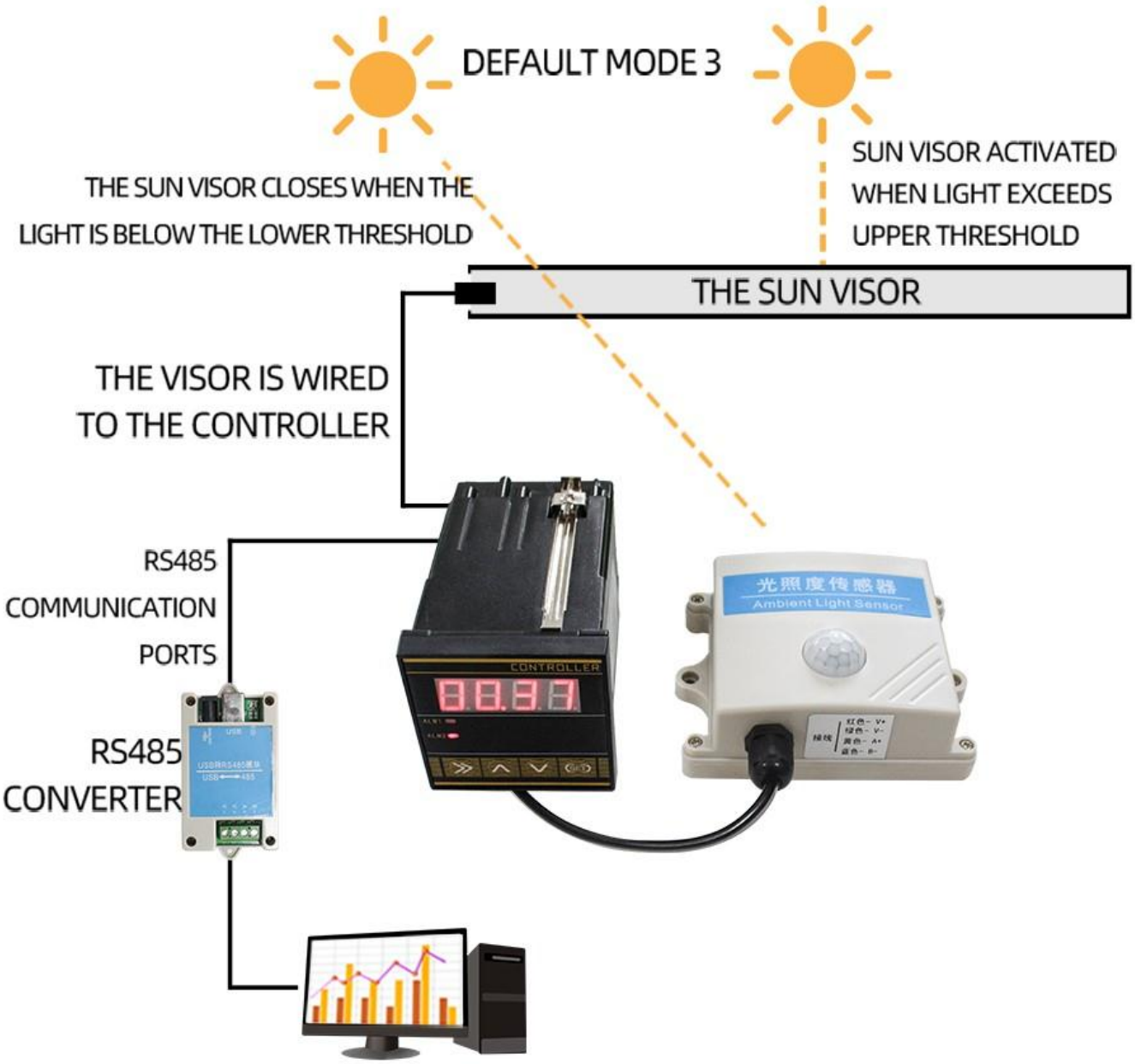




Application solution

The application of intelligent controller

EXAMPLE: WHEN THE SUN IS SHINING ABOVE/BELOW THE THRESHOLD, THE SENSOR TRANSMITS THE LIGHT INTENSITY -LUX-LUX) DATA TO THE CONTROLLER, WHICH THEN CLOSES/OPENS THE VISOR ACCORDING TO THE PRE-SET THRESHOLD, THE DATA CAN BE SYNCHRONIZED TO THE COMPUTER THROUGH THE RS485 COMMUNICATION PORT

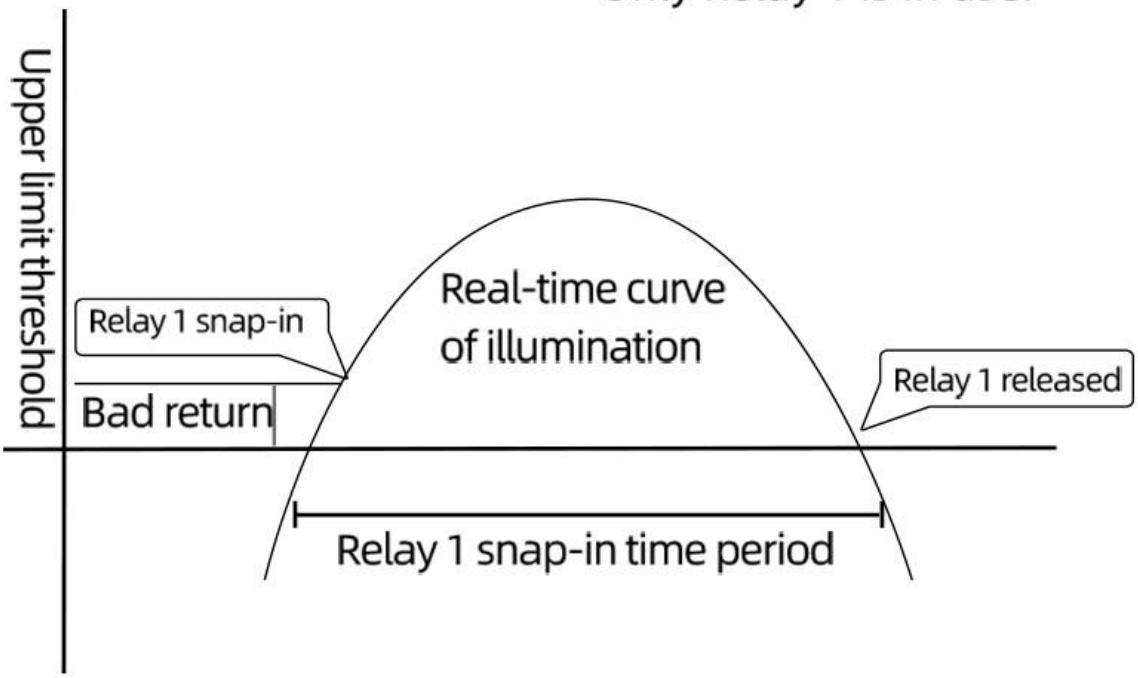


Control mode and process

Above threshold action, below threshold action, over/below threshold

Mode 1: action above upper threshold

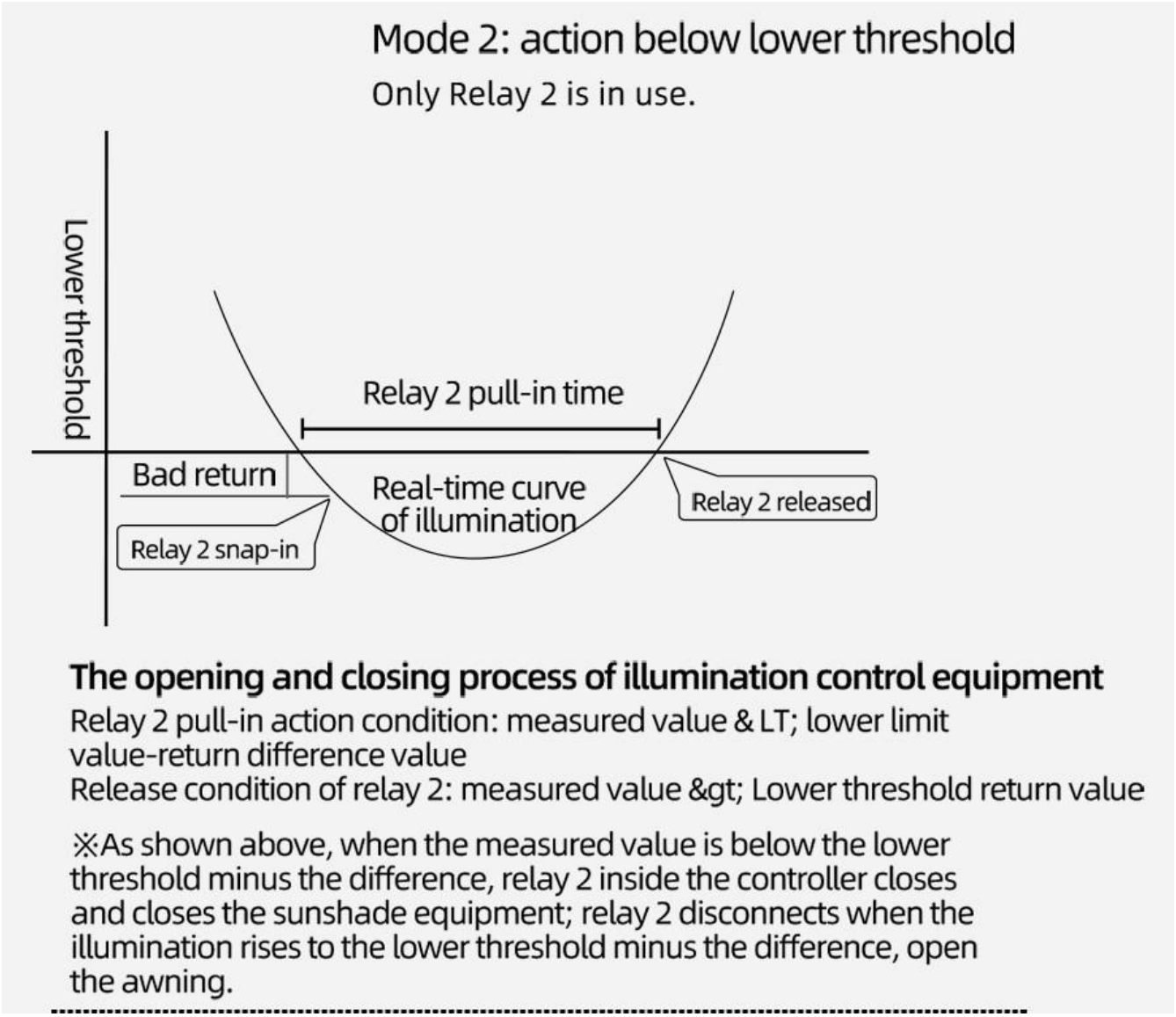
Only Relay 1 is in use.



The opening and closing process of illumination control equipment

Suction conditions of relay 1: measured value > Upper threshold return value
Relay 1 release action condition: measured value & Lt; upper limit threshold-return difference value

※As shown above, when the measured value is above the upper limit threshold plus the difference value, the relay 1 inside the controller closes and opens the sunshade equipment; when the illumination drops to the upper limit threshold minus the difference value, the relay 1 disconnects, close the awning.



The opening and closing process of illumination control equipment

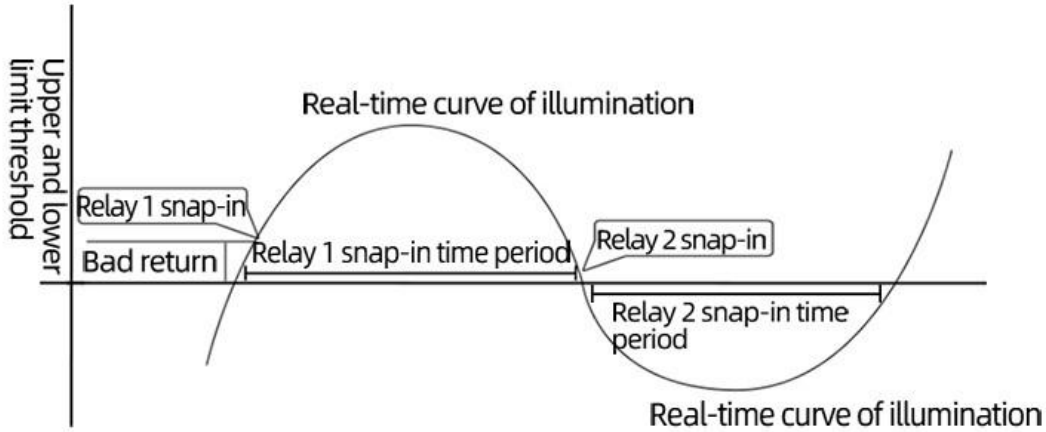
Relay 2 pull-in action condition: measured value & LT; lower limit value-return difference value

Release condition of relay 2: measured value > Lower threshold return value

※As shown above, when the measured value is below the lower threshold minus the difference, relay 2 inside the controller closes and closes the sunshade equipment; relay 2 disconnects when the illumination rises to the lower threshold minus the difference, open the awning.

Mode 3: action above/below threshold

Above the upper limit threshold relay 1 action, below the lower limit threshold, relay 2 action, generally used to control the positive and negative motor shading equipment.



The opening and closing process of illumination control equipment

Conditions of relay 1 suction: measured value > Upper threshold return value
Relay 2 suction condition: measured value & LT; lower limit threshold-return difference valueRelay 2 suction condition: measured value & LT; lower limit threshold-return difference value

※As shown above, when the measured value is higher than the upper limit value + the return difference value, the relay 1 inside the controller closes, and the motor in the sunshade is normally controlled to turn to start the sunshade; after starting, when the value is lower than the lower limit value-the return difference value, then relay 2 suction, general control awning motor reverse to close awning.

Product List

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 .

1. Read data (function code 0x03)

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

Address	Function Code	Start Address	Data Length	Check Code
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 , response format:

Address	Function Code	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 decimal value as 121, assuming the data magnification is 100, then the real value is 121/100=1.21, Others and so on.

2. Common data address table

Configuration Address	Register Address	Register Description	Data Type	Value Range
40001	00 00	光照	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	read/write	1~4

		mode		
40106	00 69	protocol type	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 query the device address through the commandFA 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.

(2) 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. .

4 Read and modify baud rate

(1) 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.

(2) 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.

5 Read and modify 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 in a rang e 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.

(2) 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.

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