XC7260

RS485 interface with communication illuminance controller

User Manual

File Version: V24.7.27

XC7260 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	XUNCHIP
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	DC6~24V 1A
Control mode	Relay
carrying capacity	10A 220VAC
Running temperature	-30~85℃
Working humidity	5%RH~90%RH

Product Size


72mm
72mm
XC72 SERIES CONTROLLER
ALM1
ALM2
SET
Fuselage length: 110mm
16mm
14mm
Bottom thickness:
3.5mm
50mm
66mm
Height: 50mm
17.5mm
26mm
20mm
36mm
Ø4mm
34.5mm
33mm
22mm
Ø12mm
※ Manual measurement, please refer to the actual product

Detailed explanation of the buttons to get started quickly

Standard MODBUS-RTU protocol, default baud rate 9600, invalid check, 8-bit data bits, software can change thresholds and other parameters, real-time query of illuminance data through RS485.

» : Use the position selection key when setting

^ : Raise the key

v : Downward adjustment

SET : Set the key

The fourth page is the mode settings

Mode 1: Alarm when the upper limit is exceeded

Mode 2: Alarm below the lower limit

Mode 3: Over/Under Limit Action

※ The range is displayed as 3.63, the actual value

The range between 0~999lux is multiplied by 10, such as: 3.63×10=36.3 lux

The range between 0~9999lux is multiplied by 100, such as: 3.63×100=363lux

The range between 0~99999lux is multiplied by 1000 such as: 3.63×1000=3630lux

The range between 0~999999lux is multiplied by 10000, such as: 3.63×10000=36300lux

Key-to-key operation

◆ Press SET to enter the upper limit threshold setting
Press "" to select a seat, and press "Λ" and "V" to adjust the value In modes 1 and 3, relay 1 operates when the value is greater than the upper limit threshold Upper threshold: 50,000 by default, 65,000 by maximum

◆Press SET twice to enter the lower limit threshold setting
Press "" to select a seat, and press "Λ" and "V" to adjust the value In mode 2 and 3, relay 2 operates when the value is less than the lower limit threshold Lower threshold: 0 by default, 65000 at most

◆Press three times SET to enter the control differential setting
Press "" to select a seat, and press "Λ" and "V" to adjust the value The default value is 1000, and the maximum value is 60000

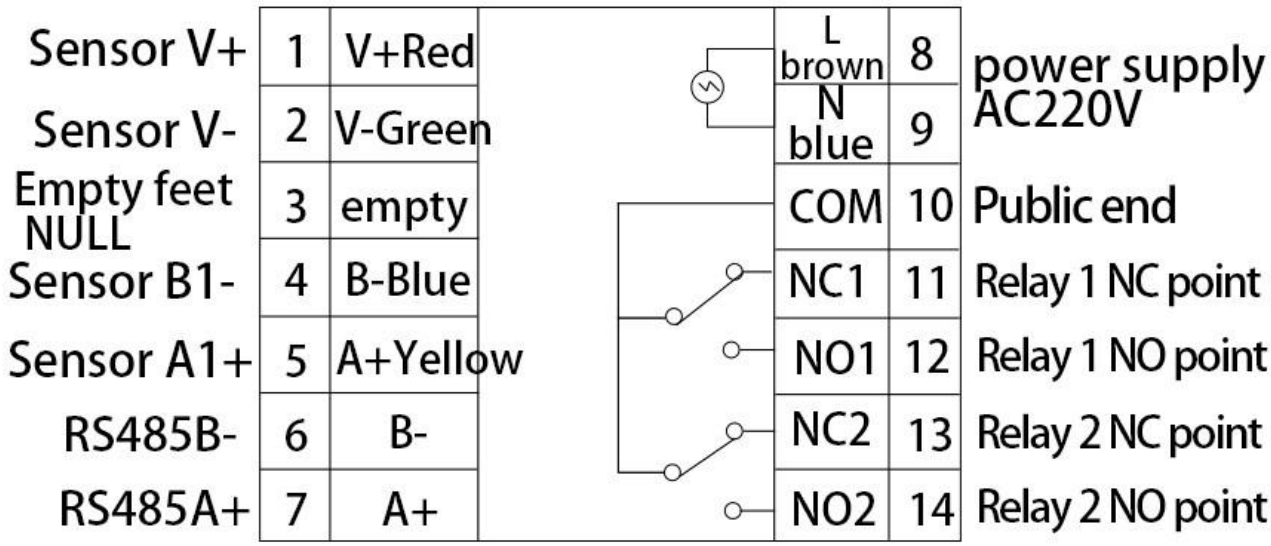
◆ Press four times SET to enter the control mode setting
Press "" to select a seat, and press "Λ" and "V" to adjust the value
Mode 1: Actions above the upper limit threshold
Mode 2, below the offline threshold operation
Mode 3: Above the upper limit threshold/below the downline threshold

Sensor wiring on the left

Red	Sensor V+
Green	Sensor V-
Yellow	Sensor B1-
Blue	Sensor A1+

The right power supply is AC220V wiring

Brown	Louis Brown
Blue	Uh-huh, blue



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.

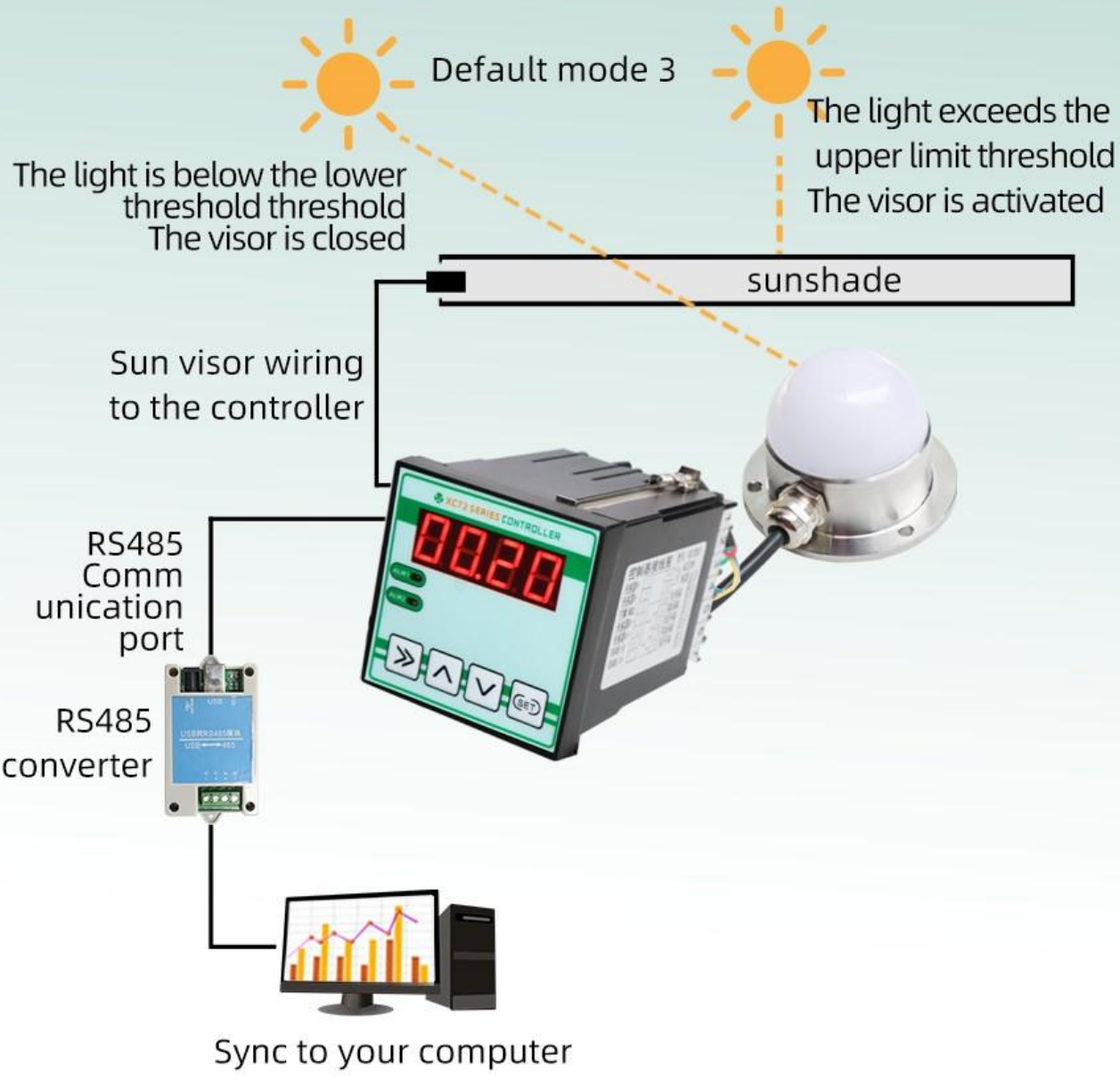
How to use?

It will be monitored in real time every day, with a wide range of applications, efficient detection, stable and reliable, and is widely used in light measurement and research in agriculture, forestry, greenhouse cultivation, breeding and construction

Application solution

Application of intelligent controllers

For example, when the sunlight shines down, the illuminance level is exceeded/lower than the threshold, the sensor will transmit the illuminance (Lux) data to the controller, and then the controller will turn off/open the sun visor according to the pre-set threshold, and the data can be synchronized to the computer through the RS485 communication port

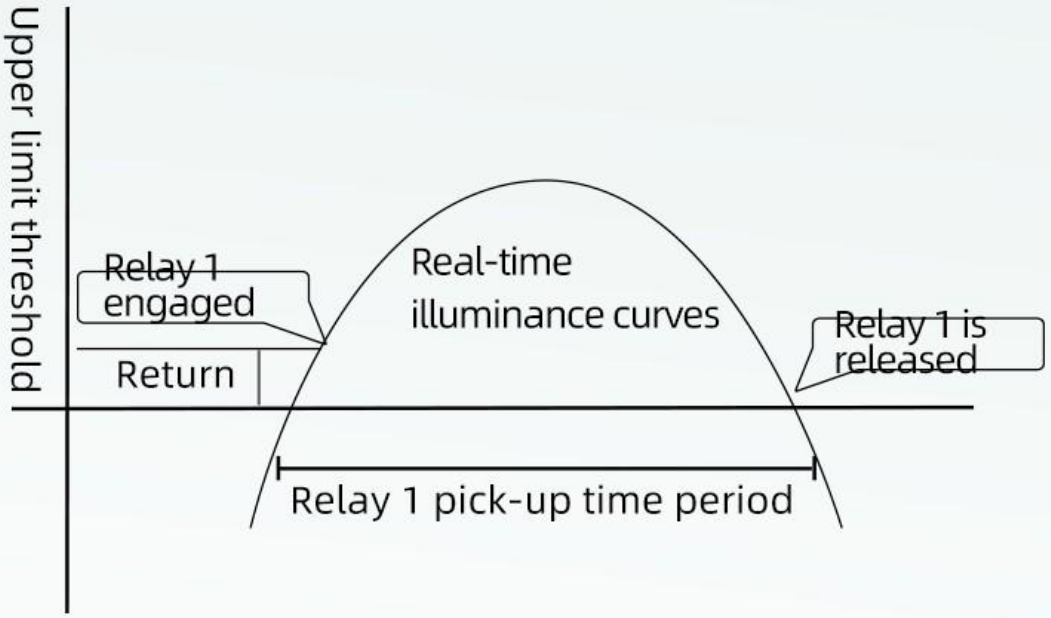


Control mode and process

Above the upper limit threshold, below the lower threshold, over/-below the threshold

Mode 1: Actions above the upper limit threshold

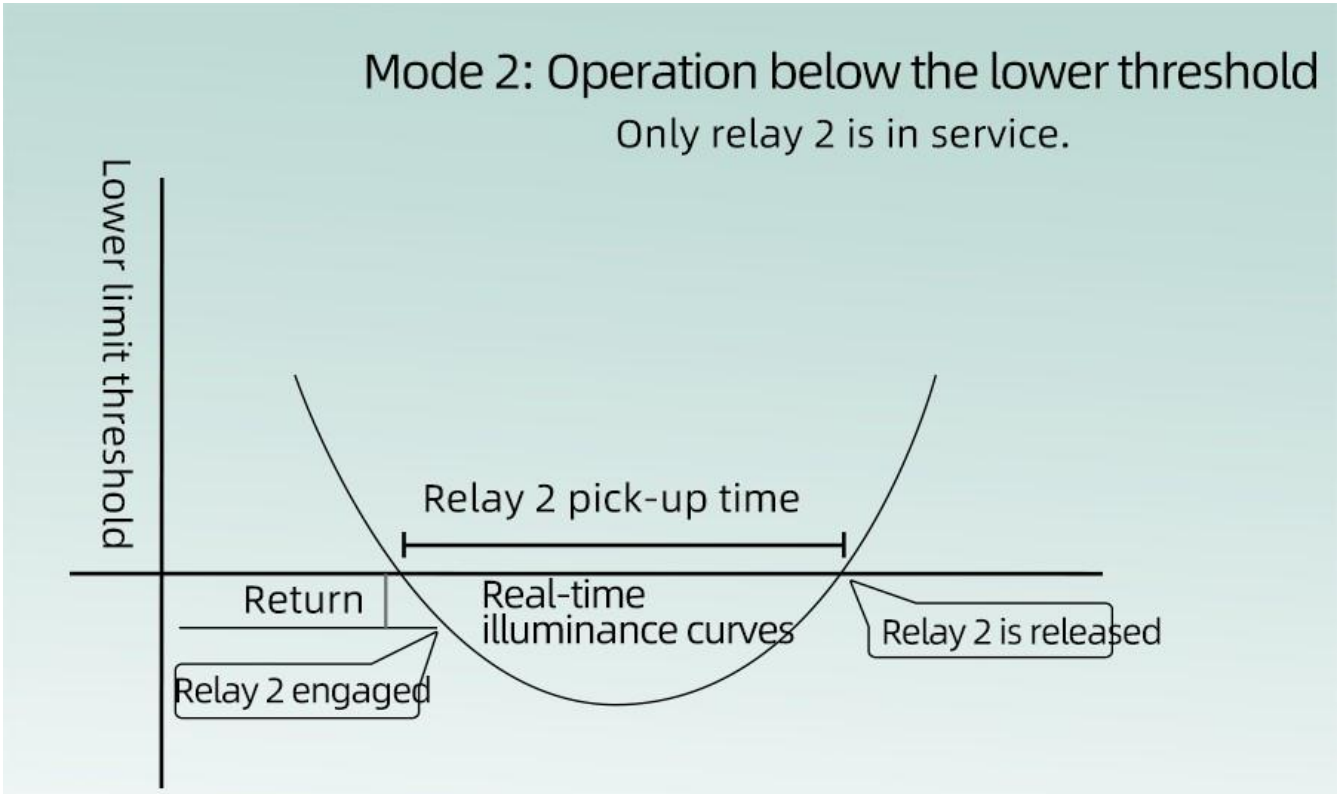
Only relay 1 is in service.



Illuminance controls the process of turning the device on and off

Relay 1 pick-up action conditions: measured value> upper limit threshold value + return difference value
Relay 1 release operating conditions: measured value< upper limit threshold -return difference value

※As shown in the diagram above, when the measured value is above the upper limit threshold plus back to the difference, the controller relays power internally device 1 is engaged, and the awning equipment is opened; When the illuminance drops to the upper limit threshold minus the difference,Then the relay 1 is disconnected, and the awning is closed.



Illuminance controls the process of turning the device on and off

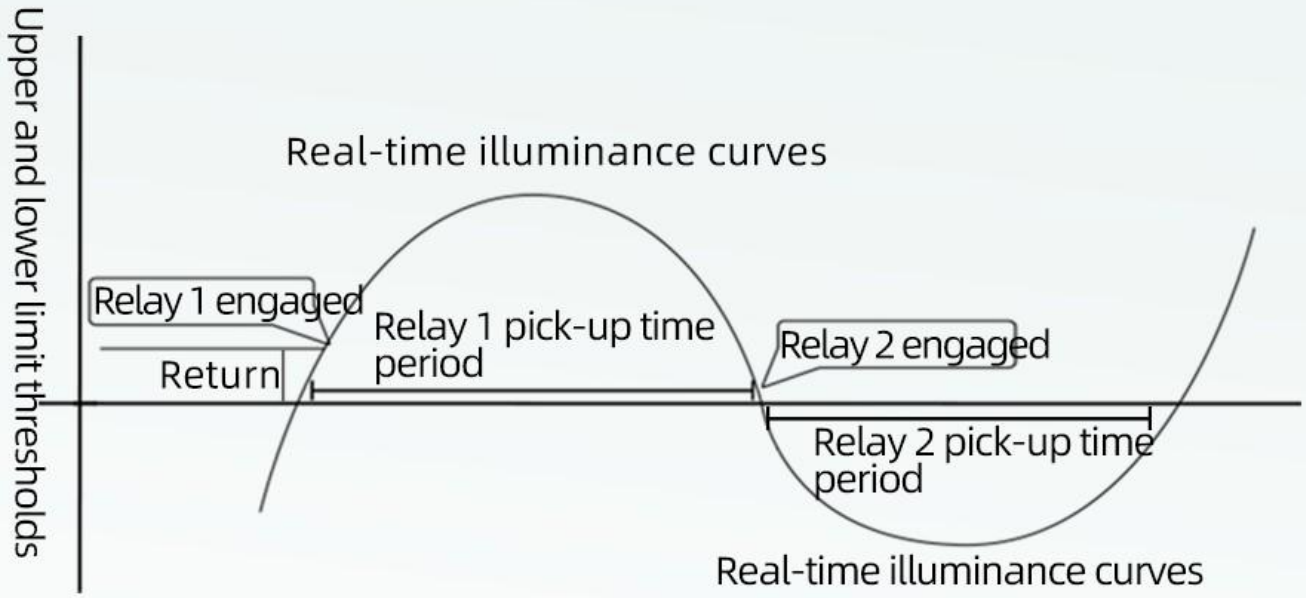
Relay 2 pick-up action conditions: measured value< lower limit threshold-return difference value

Relay 2 release action conditions: measured value > lower limit threshold value + return difference value

※As shown in the figure above, when the measured value is below the lower threshold value minus the difference value, the controller relays power internally device 2 is engaged, and the awning equipment is closed; When the illuminance rises to the lower limit threshold and adds back the difference, Then the relay 2 is disconnected, and the awning is opened.

Mode 3: Over/Under threshold action

Relay 1 action above the upper limit threshold, relay 2 action below the lower limit threshold, generally used The motor that controls the shading equipment rotates forward and backward.



Illuminance controls the process of turning the device on and off

Relay 1 pick-up conditions: measured value > upper limit threshold + return difference value
Relay 2 pick-up conditions: measured value< lower limit threshold-return difference value

※As shown in the figure above, when the measured value is higher than the upper limit threshold + return difference value, the controller relays power inside device 1 engages, and generally controls the awning motor to rotate so as to start the awning; After starting, low When the lower limit threshold-return difference value, the relay 2 is engaged, and the awning motor is generally controlled to reverseThus closing the awning.

Product List

Ship according to the user's choice

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 mode	read/write	1~4
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 9 600; 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.

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 li ability 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

Brand: XUNCHIP

Address: Room 208, Building 8, No. 215, Nandong Road, Baoshan District, Shanghai, Xinxin Brand Business Department

Chinese site: http://www.xunchip.com

International site: http://www.xunchip.com

SKYPE: soobuu

E-mail: sale@sonbest.com

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