607

ALIBUS series intelligent dimming actuator

Installation instruction manual V1.0

Jiangsu Acrel Electric MFG. Co., Ltd.

Declare

The company reserves the right to modifications to the product specifications described in this manual without notice. Before ordering, please consult the local agent for the new specifications of this product.

Contents

1. Brief introduction

ASL2XX series dimming actuator (module for short) is the control module of Acrel ALIBUS intelligent lighting control system. This module connects with other devices (such as smart panel, sensor, etc.) to establish a complete set of lighting control system for large public buildings.

As a dimming actuator, the whole machine has 0-10V dimming interface and relay with load switching function, which can realize a variety of control functions, such as: lamp switch, brightness adjustment, event recording, timing control, delay turn off light, scene control, etc.

2. Product model

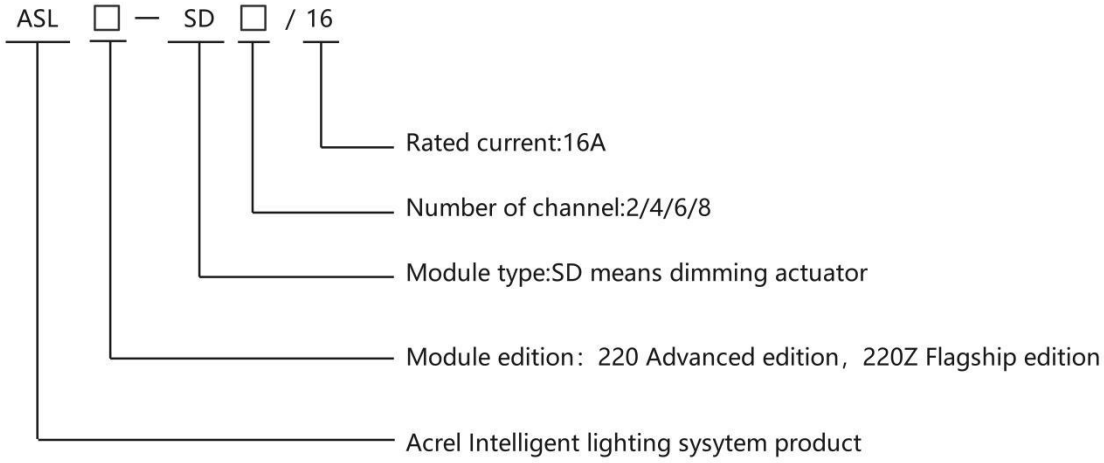


Table1: Product Specification Sheet

Product model	Function description
ASL220Z-SDx/16	1 RS485 interface, 2DI/2DO for fire linkage, 30 timing missions (including astronomical clock), 24 appointment missions, LCD display, 600 switch records, 10 power-on/off records, 12 DI/DO records, turn on/off channels records, turn off times records, total closing time record,electric voltage, current measurement, electric energy statistics and light brightness adjustment
ASL220-SDx/16	1 RS485 interface, 2DI/2DO for fire linkage, 30 timing missions (including astronomical clock), 24 appointment missions, LCD display, 600 switch records, 10 power-on/off records, 12 DI/DO records, turn on/off channels records, turn off times records, total closing time record and light brightness adjustment

3. Technical parameters

Table 2: Main technical parameters

Parameters		Model	
		ASL220Z-SDx/16	ASL220-SDx/16
Power consumption	Rated voltage	AC220V±10%	
	Power	≤5W（normal condition）	
Remote control output		Relay with lever、rated current 16A	
Power supply for the dimming interface		DC24V±2V	
The output of the dimming interface		0-10V output, compliance the IEC60929 criteria standards, and the modulation level range, positive and negative logic and modulation higher/lower limit(see "6.2 General Function" for details) can be set	
On-off signal data input		2 passive dry contacts	
On-off signal data output		2 passive normally open contacts, AC 220V/1A , DC 30V/1A	
Communication		ALIBUS、Modbus-RTU	
Installation		Standard 35mm DIN rail mounting	
Environmental requirements		Operating temperature: -10℃-+55℃; Humidity: ≤95%	
Storage temperature range		-20℃-+70℃	
Local operation display		Button + LCD display + Digital tube display	
Electric measurement accuracy		Voltage、current detection ±1% Electric energy measuring ±1%	/
Zero crossing trigger		Zero crossing trigger of relay	/

4. Configuration

4.1 Apperance and mounting dimensions（mm）

- ASL220Z-SDx/16（ASL220-SDx/16）

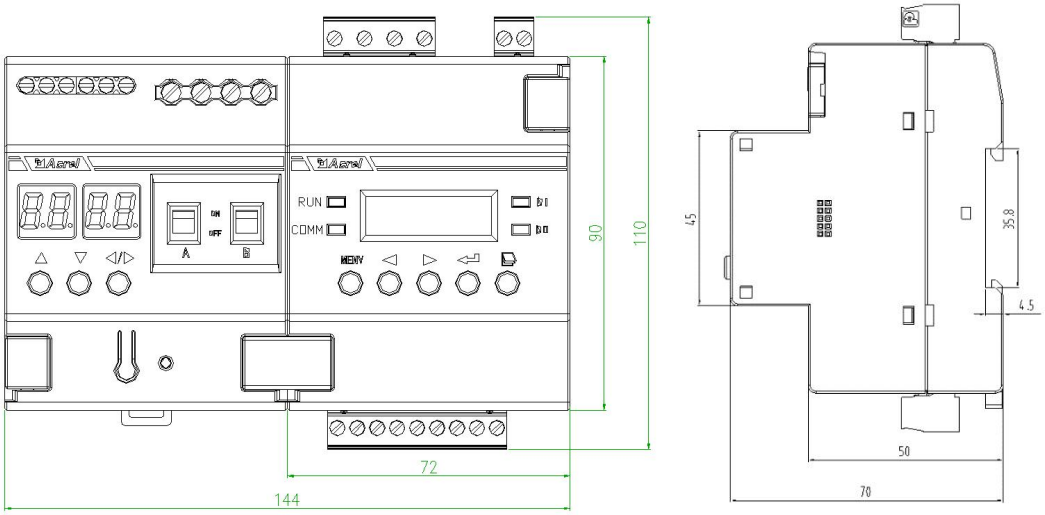


Figure1 ASL220Z-SDx/16 profile and mounting dimensions

Table3: ASL220Z-SDx/16 model introduction table

Model	Number of channel	Width(B)	Modulus
ASL220Z-SD2/16	2	144mm	8
ASL220Z-SD4/16	4	216mm	12
ASL220Z-SD6/16	6	288mm	16
ASL220Z-SD8/16	8	360mm	20

Mounting notes: this module matches with 35mm DIN rail.

4.2 Electric wiring diagram

- ASL220Z-SDx/16（ASL220-SDx/16）

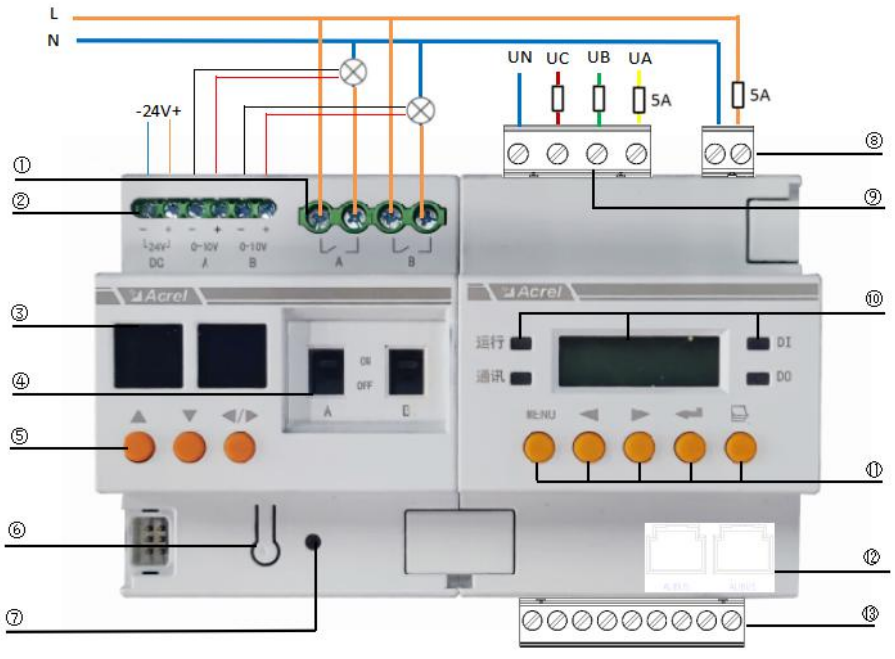


Figure2 ASL220Z-SDx/16 schematic diagram of the dimming actuator wiring

Figure 2 shows the wiring diagram of the 2-way dimming actuator. In practical use, the 2,4,6,8 dimming actuator wiring is similar, which are not listed here.

① Control interface for lighting circuits switch;

② Dimming interface: There are the DC24V power supply input interface and channel A/B dimming control output interface;

③ Digital tube display;

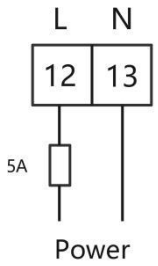
④ Relay manual operation hole;

⑤ Dimming button: Up button ▲ ,down button ▼ and selection button ◀/▶;

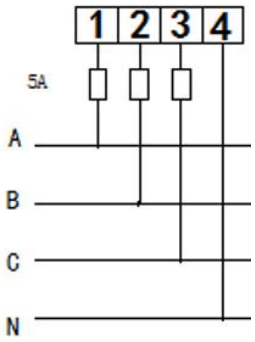
⑥ Programming button;

⑦ Running and programming indicator;

⑧ Power supply terminal;



⑨ Voltage measurement terminal:Only for ASL220Z series dimming actuator;

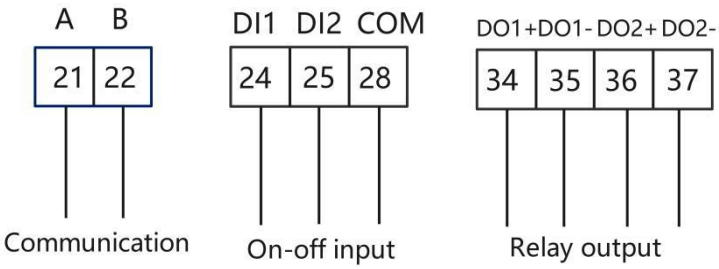


⑩ Display screen, operation/communication indicator, DI/DO indicator;

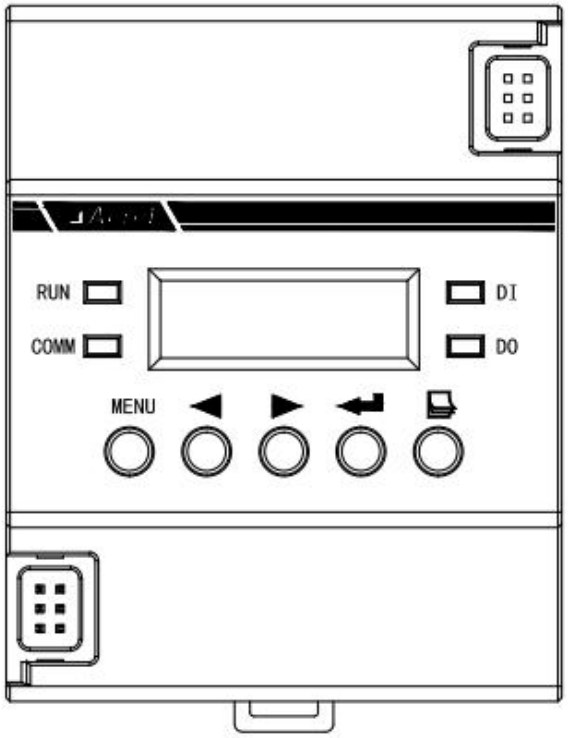
⑪ Button: Menu button MENU, left button ◀, right button ▶, enter button ↵ and turn page button ⧉ in turn;

⑫ ALIBUS terminal;

⑬ RS485 communication and DI/DO terminal;



5. Application guide



5.1 Indicator definition

5.1.1 Master module indicator

- ASL220Z-SDx/16（ASL220-SDx/16）

Running indicator （green）	Flash（when the module is working, the flashing frequency is about once a second）
Communication indicator（green）	Flash（the flashing frequency is about once a second during ALIBUS communication） Eternal light（when the bus is crowd）
DI（red）	Eternal light（DI signal input ）
DO（red）	Eternal light（output switch signal）

5.1.2 Slave module indicator

The indicator has two colors and two different display status:

The light turns on and off alternately	The module is in control test status
The light flashes	The module is in normal working status

5.2 Button operation

5.2.1 Description of the master module button

- ASL220Z-SDx/16（ASL220-SDx/16）

The ASL220Z-SDx/16 master module has menu button MENU, left button◀, right button▶, enter button ↵ and page turn button . The module can be modified to address and set parameters by pressing the button.

Menu button MENU	In the non-programming mode, press this button to enter the programming mode, prompt for the password, or return to the previous menu. In programming mode, it is used to return to the previous menu, or exit the programming mode.
Left button◀/right button▶	In the non-programmed mode, it is used to switch display interface, cursor displacement, or password. In programming mode, it is used to change the current setting content, cursor shift.
Enter button ↵	It is used to confirm the selection of menu items and to enter the next level of menu. On the state display screen: Long press this button to enter the channel control screen;short pressthis button to enter the power display interface.
Page turn button	In non-programming mode, it is used to move the cursor when entering the information query interface or entering a password.

5.2.2 Description of the slave module button

Slave module has programming button, up button ▲, down button ▼, selection button◀/▶. The dimming and control functions can be achieved by pressing buttons.

Programming button	Short press	In control mode,short press the button can be used for switching on/off all the channels
	Long press	Long press the button for 3s, you can enter the control mode; long press the button for 3s again to exit control mode.

		It will also exit control mode automatically after no operation for 15s.
Up button ▲	Short press	In dimming control mode, short press the button to increase the value by one.
	Long press	In dimming control mode, long press the button for more than 2s, the value increases continuously.
Down button ▼	Short press	In dimming control mode, short press the button to decrease the value by one.
	Long press	In dimming control mode, long press the button for more than 2s, the value decreases continuously.
Selection button◀/▶	Short press	In dimming control mode, short press the button can switch different digital tube of dimming control. When controlling any digital tube, the digital tube flashes.
	Long press	Long press the button for more than 3s, you can enter the dimming control mode; long press the button for more than 3s again to exit dimming control mode. It will also exit dimming control mode automatically after no operation for 15s.

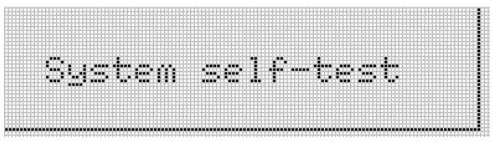
5.3 LCD display

ASL220Z-SDx/16 and ASL220-SDx/16 have their own LCD display, which has functions, including dimming actuator status query, information query, time control and timing plan query and setting, DI/DO linkage query and setting, RS485 communication function query and setting, and other parameter query and setting.

5.3.1 Dimming actuator status query

1)Power on, power off and self-test

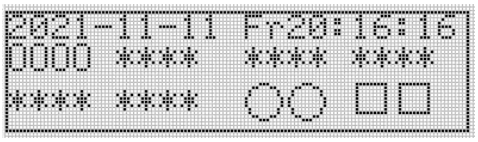
At the moment of power on, the dimming actuator interface displays as shown in the figure below. All indicators light up at the same time, and the module performs self-test. The interface is shown in the figure below. All indicators turn off in turn, and the final operation indicator flashes, and the module enters the normal monitoring state.



2) Status display interface

After self-test, enter the status display interface. The first line displays

the current date, week and time. The next two lines display the channel status and output (DO) and input (DI) status of each module.



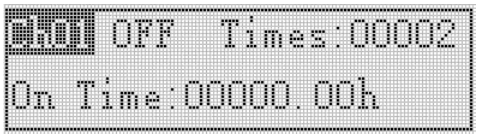
Note:□ indicates DI no input,■ indicates DI input.

○ indicates DO no output,●indicates DO output.

3) Channel record interface

Press the left ◂ or right ▸ button in the status display interface to enter the channel using record interface. The first line displays the current status of the channel and the switching on times of the channel, and the second line displays the cumulative time of channel closing. In the channel record interface, press the left ◂ or right ▸ button to switch to the next channel record.

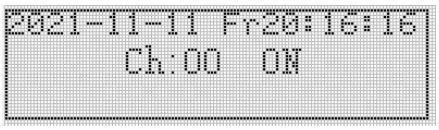
Note: "OFF" indicates channel switching off. When the dimming voltage ranges from 0 to 10V and the dimming mode is proportional, 10 indicates that the output voltage of the 0-10V output port is 1V, and 100 indicates that the output voltage of the 0-10V output port is 10V. And so on.



4) Channel control interface

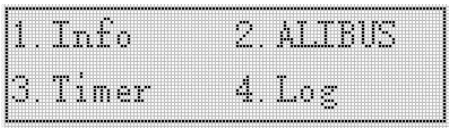
Long press the enter button ↵ for 3s in the status display interface to enter the channel control interface. You can control the channel's switching of the slave module. The interface displays the channel to be controlled and the control status. After the test, press the menu button MENU to exit.

Note: Channel 00 represents all channels, channel 01 represents the first channel, and so on.

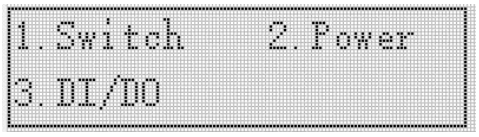


5.3.2 Information query

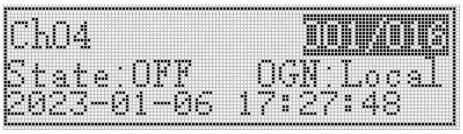
In the status display interface, press the page turn button ⎘ to enter the information query interface, press the left ◂ or right button ▸ to switch records, and press the enter button ↵ to enter.



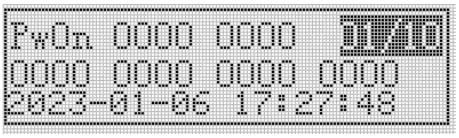
In the information query interface, press the left ◀ or right button ▶ to query switch recording, power on/off, DIDO recording, and press ↵ to enter the interface.



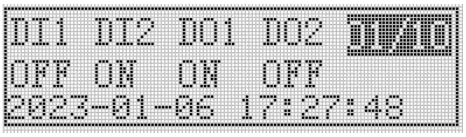
① The switch record interface can query 600 switch records, and the interface displays the channel, status, source and time of each action. Press the left ◀ or right ▶ button to switch to the next record.



② The power on/off interface can query 10 module power on/off records, and the interface displays the channel status and power on/off time after each power on/off. Press the left ◀ or right button ▶ to switch to the next record.



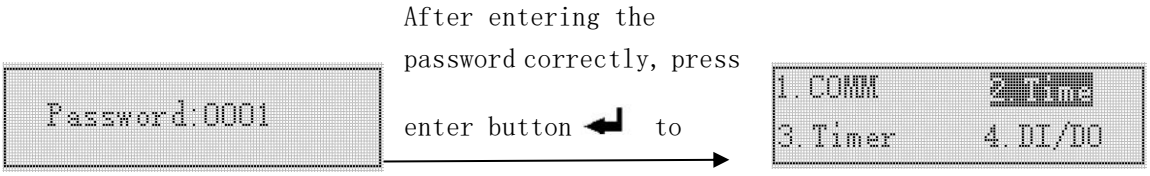
③ 12 DI/DO action records can be queryed in the DI/DO record interface. The interface displays the status and action time of DI/DO after each action. Press the left ◀ or right ▶ button to switch to the next record.



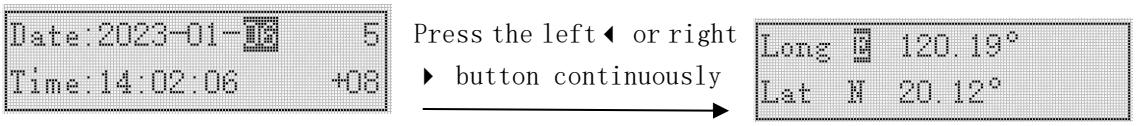
5.3.3 Time setting

Press the menu button MENU to enter the programming password interface: press the page turn button ⎘ and the left ◀ or right ▶ button to enter the user password (the default password is 0001), and then press the enter button ↵ to enter. Enter the programming interface after the password is correct. Press the left ◀ or right ▶ button to switch the time setting in this interface, and press enter button ↵

to enter the next menu for setting.



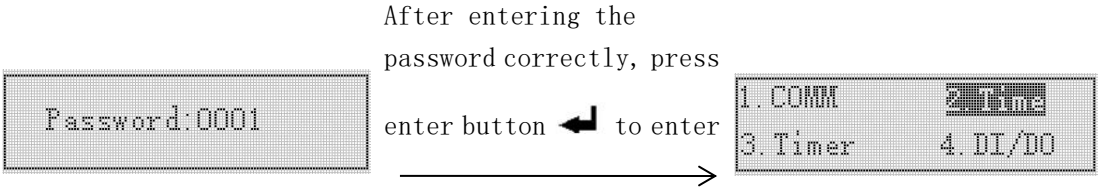
In the time setting interface, you can modify or set the year, month, day, week (Sunday is represented by 0), time, time zone, longitude and latitude;



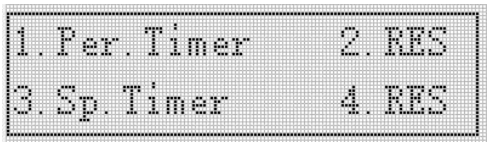
After setting, press the menu button MENU to return until when ask you whether to save the setting or not. At this time, press the left ◂ or right ▸ button to select whether to save the data or not. Press the enter button ↵ to confirm and exit the setting interface.

5.3.4 Timing plan setting

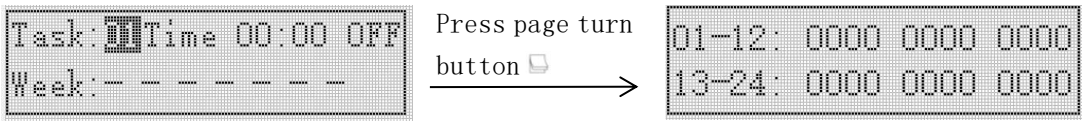
Press the menu button MENU to enter the programming password interface. Enter the user password (the default password is 0001) by pressing the page turn button and the left ◂ or right ▸ button, and then press the enter button ↵ to enter. Enter the programming interface after entering the correct password. Press the left ◂ or right ▸ button on this interface to switch timing settings, and press the enter button ↵ to enter the next menu for setting.



In the "Timing setting" interface, press the left ◂ or right ▸ button to switch between per.timer and sp.timer, and press enter button ↵ to enter. In the "Timing setting" interface, select the first line "Res", and press enter button ↵ to confirm to clear all regular timing tasks; Select "RES" in the second line, and press enter button ↵ to confirm. All scheduled tasks can be cleared.



(1) In the "Per.timer" interface, you can set or modify 30 general scheduled tasks. In the first interface, you can set or modify the task time and type (on indicates timing to channel switching on, and off indicates timing to channel switching off); The second interface can set or modify which channels should be controlled (1 means to enable the channel to change the state, 0 means to disable the channel to change the state).

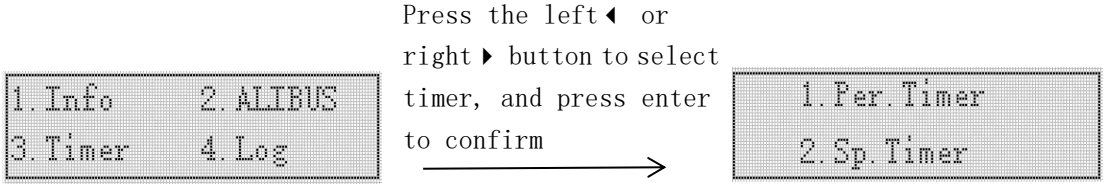


(2) In the "Sp.Timer" interface, you can set or modify 24 scheduled appointment tasks. In the first interface, you can set or modify the task time and type (on indicates timing to channel switching on, and off indicates timing to channel switching off); The second interface can set or modify which channel should be controlled (1 means to enable the channel, 0 means to disable the channel change the state).

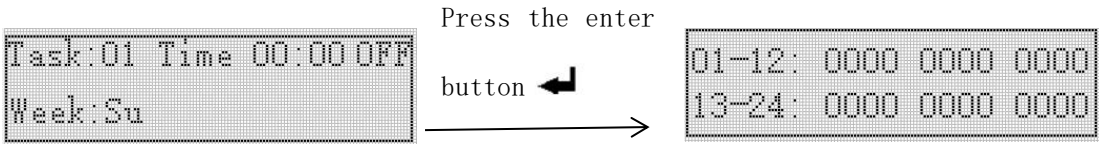
After setting, press the menu button MENU to return until whether to save the setting interface. At this time, press the left ◀ or right ▶ button to select whether to save or not. Press the enter button ↵ to confirm and exit the setting interface.

5.3.5 Timer plan list

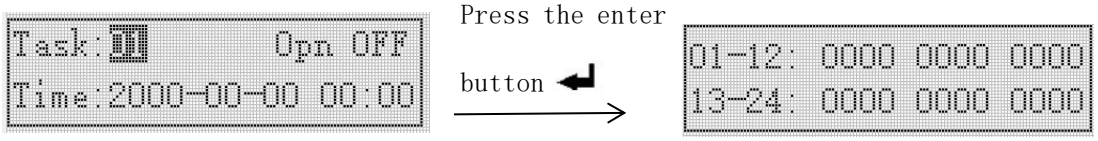
In the status display interface, press the page turning button to enter the information query interface, press the left ◀ or right ▶ button to switch timer, and press the enter button ↵ to enter the next menu for viewing. In the timer interface, press the left ◀ or right ▶ button to switch between regular and special tasks, and press enter button ↵ to enter.



(1) The regular scheduled task interface can query 30 tasks. The first interface displays the time and type of each task (on indicates timing to channel switching on, and off indicates timing to channel switching off), week, and the second interface displays the controlled channel. Press the left ◀ or right ▶ button to switch to the next task.

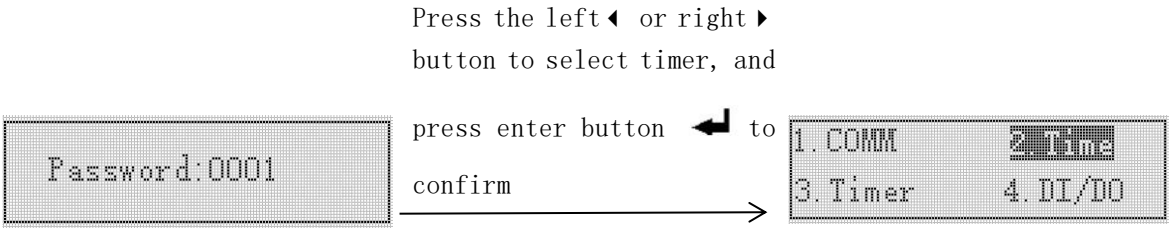


(2) The scheduled task interface can query 24 tasks. The first interface displays the type and time of each task (on indicates timing to channel switching on, and off indicates timing to channel switching off), and the second interface displays the controlled channel. Press the left ◂ or right ▸ button to switch to the next task.



5.3.6 DI/DO setting

Press the menu button MENU to enter the programming password interface: press the page turn button and the left ◂ or right ▸ button to enter the user password (the default password is 0001), and then press the enter button to enter. After the password is correct, enter the programming interface. Press the left ◂ or right ▸ button on this interface to switch the linkage settings, and press the Enter button to enter.



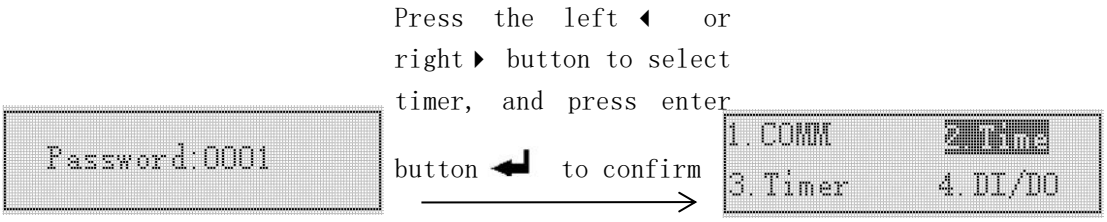
In the "DI/DO setting" interface, you can set the linkage functions of DI1 and DI2. The first interface can set the linkage switching of DI1/DI2, mode setting, channel selection, and channel state when reciving signal.

If you only need to enable the linkage function of some channels, you need to enter the second interface to set the channels to be controlled (1 means channel is enabled to change, 0 means channel is disabled to change).

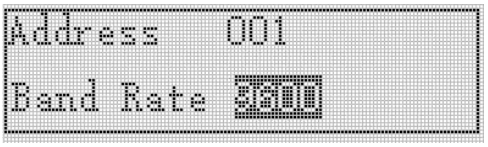
5.3.7 RS485 communication setting

Press the menu button MENU to enter the programming password interface: press the page turn button and the left ◂ or right ▸ button to enter the user password (the default password is 0001), and then press the enter button to enter. After the password is correct, enter the programming interface. Press the left ◂ or right ▸ button on this interface to switch communication settings. Press the enter button

↵ to enter the next menu for setting.



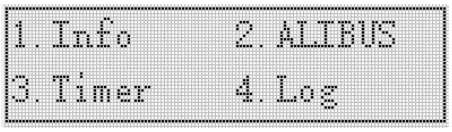
RS485 communication address and baud rate can be set in the "communication setting" interface.



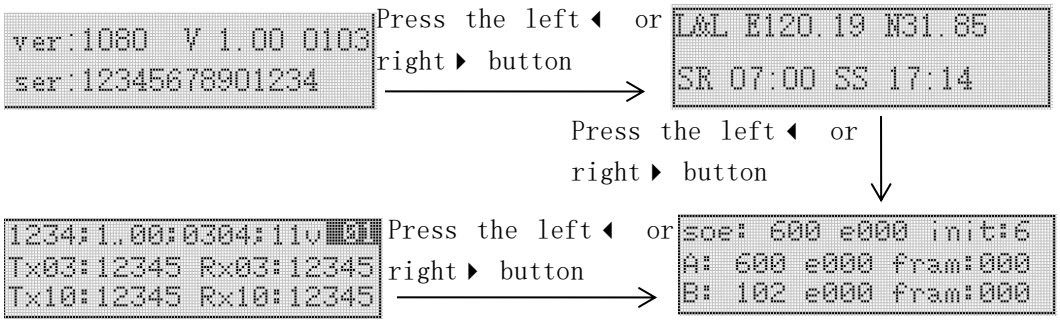
5.3.8 Other parameters and information

1) Information query

In the status display interface, press the page turning button to enter the information query interface, press the left ◀ or right ▶ button to switch information, and press the enter button ↵ to enter.



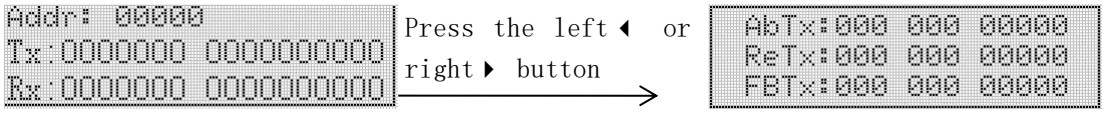
Under the information interface, the first interface displays the device information of the module, the second interface displays the longitude and latitude and the local sunrise and sunset time, and the third interface displays the module communication information. From the fourth interface, the communication information of each slave module is displayed screen by screen.



2) ALIBUS query

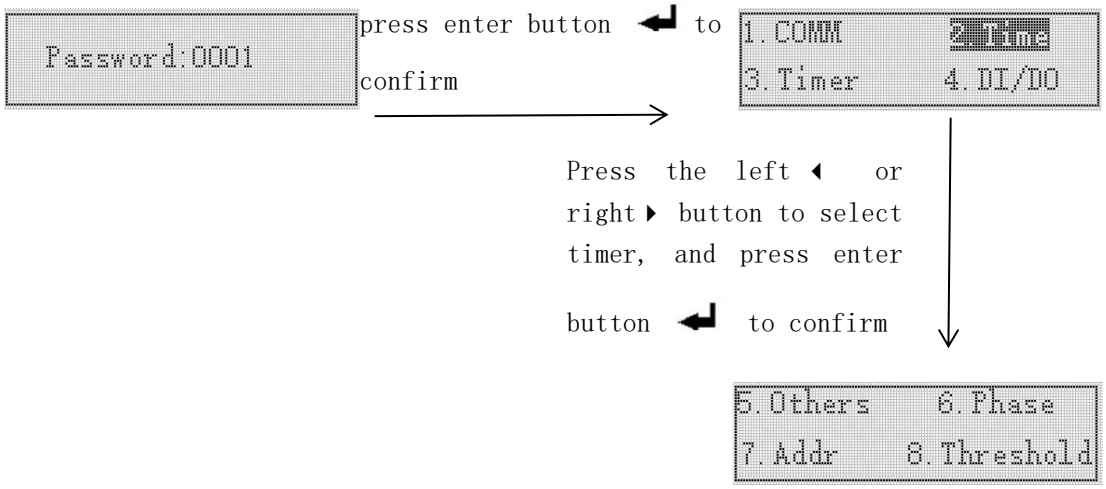
In the status display interface, press the page turn button to enter the information query interface, press the left ◀ or right ▶ button to switch to ALIBUS, and press the enter button ↵ to enter.

In the ALIBUS interface, the first and second interfaces display the communication information of ALIBUS.

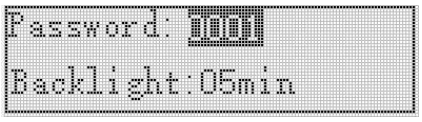


3）Other settings

Press the menu button MENU to enter the programming password interface: press the page turn button and the left ◀ or right ▶ button to enter the user password (the default password is 0001), and then press the enter button to enter. Enter the programming interface after the password is correct. Press the left ◀ or right ▶ button on this interface to switch other settings, and press enter button to enter.



In the "Other settings" interface, you can modify the password and backlight time.



After setting, press the menu button MENU to return until whether to save the setting interface. At this time, press the left ◀ or right ▶ button to select whether to save or not. Press the enter button to confirm and exit the setting interface.

5.4 Digital tube display

Each slave module has two digital tubes, the first digital tube showing the dimming level of channel A dimming interface and the second digital tube showing

the dimming level of channel B dimming interface. When the dimming higher limit is 100 and the dimming lower limit is 10, the relationship between the digital tube display and the dimming control interface voltage is shown in the following table.

Note: Each slave module must be connected to DC24V auxiliary power supply.

（1）Dimming voltage range: 0-10V

Positive dimming mode:

Digital tube display	Channel state	Dimming control output interface to out voltage
00	OFF	0V
10	ON	1V
20	ON	2V
30	ON	3V
...	...	...
FL	ON	10V

6. Function

All functions can be set in configuration software.The parameter settings are described as follows:

6.1 Heartbeat

The upload interval of heartbeat message is 5-255s, and 0 means not send.

6.2 General function

- Pow-off status: The relay status can be set to close, open and hold. This parameter is used to set the channel status when power off.
- Pow-on status: The relay status can be set to close, open（the dimming level can be set to 10-100）and hold. It is used to set the channel status and dimming level when power on.
- Control group address:You can set up to 10 addresses,and the range is 0-65535
- Dimming fade time: The fade time from lower dimming limit to higher dimming limit. The range is 0-65535,and it is in second.
- Diming higher limit: You can set the dimming level of the higher limit, the dimming range is 10-100.
- Diming lower limit: You can set the dimming level of the lower limit, the dimming range is 10-100.

6.3 Scene function

- You can set up 3 scene control group adresses,and the range is 0-65535
- A group address can set 5 scene numbers. Scene number range is 0-255, and 0 means

not to ensable.

- You can set the dimming level corresponding to each scene number. The range is 0, 1,lower dimming limit-higher dimming limit (0 represents switching off, 1 represents the highest dimming level).

6.4 Timing function

- Light off delay time: The range is 0-65535, and it is in second.
- Dimming level (received the trigger signal) : You can set the dimming level after receiving the trigger signal. The range is 0, 1, lower dimming limit-higher dimming limit(0 represents the separate, 1 represents the higher dimming level).
- Dimming level (the trigger signal is over) : You can set the dimming level after the trigger signal is over. The range is 0, 1,lower dimming limit - higher dimming limit (0 represents the separate, 1 represents the higher dimming level).

6.5 Threshold

- The threshold can be set in five ranges, and the value ranges widen from left to right. The range is 0-65535.
- Action value: The action value (dimming value) that can be set in the interval ranges from lower dimming limit to higher dimming limit,and 255 (indicates hold).
- You can set one threshold control group address. The range is 0-65535.

7. Communication

7.1 Interface overview

The dimmimg actuator supports one RS485 communication and uses the Modbus-RTU communication protocol to communicate with our EMS integrated energy efficiency management system or third-party platforms. Default communication settings: address 001 and baud rate 9600.

7.1.1 Transmission

Information is transmitted asynchronously and in bytes. The communication information transmitted between the master and slave computer is in 11-bit format, including 1 start bit, 8 data bits (the least significant bit is sent first), no parity bit, and 1 stop bit.

7.1.2 Information frame format

Address code	Function code	Data field	CRC check code
1 byte	1 byte	n bytes	2 bytes

Address code: The address code consists of 1 byte (8-bit binary code) at the beginning of a frame. The decimal value ranges from 0 to 255, and the maximum value

is 247. These bits indicate the address of the user-specified terminal device that will receive data from the master module connected to it. The address of each terminal device must be unique, and only the terminal addressed will respond to the query containing that address. When the terminal sends back a response, the slave address data in the response tells the host which terminal is communicating with it.

Master send		Send messages
Address code		01H
Function code		03H
Start address	High byte	00H
	Low byte	00H
Number of registers	High byte	00H
	Low byte	03H
CRC check code	High byte	05H
	Low byte	CBH

Slave return		Send messages
Address code		01H
Function code		03H
Byte number		06H
000H register data	High byte	16H
	Low byte	05H
001H register data	High byte	03H
	Low byte	0DH
002H register data	High byte	1BH
	Low byte	09H
CRC check code	High byte	B4H
	Low byte	F2H

Function code: The function code tells the terminal addressed to what function to perform. The following table lists the function codes used in this series of devices, and their meaning and function.

Function	Definition	Operation
03H	Read data register	Get the current binary value for one or more registers
10H	Preset multiple registers	Set the binary value into a series of multiple registers

Data area: The data area contains the data required by the terminal to perform a specific function or the data collected when the terminal responds to a query. The contents of this data may be numeric values, reference addresses, or set values. For example, the function code tells the terminal to read a register, the data area needs to indicate which register to start and how many data to read, and the embedded address and data vary according to the type and different contents between the slave machine.

CRC check code: The error check (CRC) field takes two bytes and contains a 16-bit binary value. The CRC value is calculated by the transmission device and then attached to the data frame. The receiving device recalculates the CRC value as it

receives the data and then compares it to the received value in the CRC domain. If the two values are not equal, an error has occurred.

7.2 Function code

7.2.1 Function code 03H: Read the register

This function allows users to obtain data collected and recorded by the device and system parameters. The number of data requested by the master module at a time is not limited, but cannot exceed the defined address range.

The following example is the ASL220-S8/16 dimming actuator at address 001, baud rate 9600, reading the basic data collected by three (each address in the data frame occupies 6 bytes).Take reading the current time (year, month, day, hour, minute, second) as an example. The register address of the year and month is 0000H, the register address of the day and hour is 0001H, and the register address of the minute and second is 0002H. The current time is 13:2:9 on May 3, 2022.

7.2.2 Function code 10H: Write the register

The function code 10H allows the user to change the contents of multiple registers, and the time date in the device may be written with this function number. The master module can write up to 16 (32 bytes) of data at a time.

The following example is a dimming actuator with address 001 and baud rate 9600, channel 1-16, namely FFFF is writed to 0009H.

Master send		Send messages
Address code		01H
Function code		10H
Start address	High byte	00H
	Low byte	08H
Number of registers	High byte	00H
	Low byte	02H
Byte number		04H
0008H data to be written	High byte	00H
	Low byte	00H
0009H data to be written	High byte	FFH
	Low byte	FFH
CRC check code	High byte	F3H
	Low byte	B9H

Slave return		Send messages
Address code		01H
Function code		10H
Start address	High byte	00H
	Low byte	08H
Number of registers	High byte	00H
	Low byte	02H
CRC check code	High byte	C0H
	Low byte	0AH

7.3 Actuator parameter address table

7.3.1 Actuator real-time status address table

Number	Address	Parameter	Read/write	Range	Type
1	0x0000 high byte	Year	R/W	0-99	uint8
	0x0000 low byte	Month	R/W	1-12	uint8
2	0x0001 high byte	Day	R/W	1-31	uint8
	0x0001 low byte	Hour	R/W	0-23	uint8
3	0x0002 high byte	Minute	R/W	0-59	uint8
	0x0002 low lbyte	Second	R/W	0-59	uint8
4	0x0003 high byte	Week	R/W	0-6 indicates Sunday-Saturday	uint8
	0x0003 low byte	Reserve			uint8
5	0x0004	On-off input	R	bit0=0, DI1 no input bit0=1, DI1 input bit1=0, DI2 no input bit1=1, DI2 input	uint16
6	0x0005	Relay output	R/W	bit0=0, DI1 no output bit0=1, DI1 output bit1=0, DI2 no output bit1=1, DI2 output	uint16
7	0x0006	Reserve			
8	0x0007	Switch status	R/W	The bit0-7 indicates channel 1 - 8, and the maximum channel 8 Bit 0 = 1: channel 1 is close Bit 0 = 0: channel 1 is open And the like	uint16

9	0x0008	Reserve			
10	0x0009	Write to the ON status bit	W	The bit0-7 indicates channel 1-8; bit0 = 1: channel 1 is closed And the like	uint16
11	0x000A	Reserve			uint16
12	0x000B	Write to the OFF status bit	W	The bit0-7 indicates channel 1-8; bit0 = 1: channel 1 is open And the like	uint16
13-19	0x000C-13	Channel 1-8 status	R/W	0 means separate, 1 means close, 0xFFFF means that the loop is not available,0xEEEE means the loop is fault,0x000A-0x0064 means the dimming level of 10-100	uint16
20-36	0x0014-23	Reserve			
37-42	0x0024-31	Channel 1-8 current	R	2 decimal places, in A	uint16
43-60	0x0032-3B	Reserve			
61-68	0x003C-43	Channel 1-8 current harmonic content	R	1 decimal places, in %	uint16
69-84	0x0044-53	Reserve			
85-92	0x0054-5B	Channel 1-8 active power	R	3 decimal places, in kW	uint16
93-108	0x005C-6B	Reserve			
109-116	0x006C-73	Channel 1-8 active electric energy	R	3 decimal places, in kWh	uint32
117-156	0x0074-9B	Reserve			
157-164	0x009C-A3	Channel 1-8	R		uint32

		relay closing time		Unit:S	
165-204	0x00A4-CB	Reserve			
205-212	0x00CC-D3	Channel 1-8 number of relay closures	R	Unit:time	uint16
213-228	0x00D4-E3	Reserve			
229-231	0x00E4-E6	A, B, C phase voltage	R	1 decimal places, in V	uint16
232	0x00E7	Voltage frequency	R	2 decimal places, in Hz	uint16

7.3.2 Parameter settings the address table

Number	Address	Parameter	Read/write	Range	Type
1	0x0101	Address	R/W	1-247	uint8
2	0x0102	Reserve			
3	0x0103	Baud rate	R/W	4800.9600.19200.38400	uint8
4	0x0104 high byte	DI1 function	R/W	0 means switching off 1 means switching on	uint8
	0x0104 low byte	DI1 mode		0 mode:0（0->1） 1 mode:1（0->1,1->0）	uint8
5	0x0105	Reserve			
6	0x0106	DI1,switch association loop	R/W	The bit0-7 indicates channel 1-8; Bit0 = 0: channel 1 is not enabled Bit0 = 1: channel 1 is enabled And the like	uint16
7	0x0107	Reserve			
8	0x0108	DI1,switch association action value	R/W	The bit0-7 indicates channel 1-8 Bit 0 = 1: channel 1 is close Bit0 = 0: channel 1 is open	uint16

				And the like	
9	0x0109 high byte	DI2 function	R/W	0 means switching off 1 means switching on	uint8
	0x0109 low byte	DI2 mode		0 mode:0（0->1） 1 mode:1（0->1,1->0）	uint8
10	0x010A	Reserve			
11	0x010B	DI2,switch association loop	R/W	The bit0-7 indicates channel 1-8; Bit0 = 0: channel 1 is not enabled Bit0 = 1: channel 1 is enabled And the like	uint16
12	0x010C	Reserve			
13	0x010D	DI2,switch association action value	R/W	The bit0-7 indicates channel 1-8 Bit 0 = 1: channel 1 is close bit0 = 0: channel 1 is open And the like	uint16

7.3.3 Timed address table

7.3.3.1 Regular timed address table

Number	Address	Parameter	Read/write	Range	Type
1-2	0x1000 high byte	Longitude	R/W	-180-+180	float
	0x1001 low byte				
3-4	0x1002 high byte	Latitude	R/W	-90-+90	float
	0x1003 low byte				
	0x1004 high byte	Sunrise(hour)	R	0-23	uint8

5	0x1004 low byte	Sunrise(minute)		0-59	uint8
6	0x1005 high byte	Sunset(hour)	R	0-23	uint8
	0x1005 low byte	Sunset(minute)		0-59	uint8
7	0x1006	Reserve			
8	0x1007	Timing task 1 channel setting	R/W	Bit 0-7 indicates channel 1 - 8 Bit 0 = 1: channel 1 is enabled Bit 0 = 0: channel 1 is not enabled And the like	uint16
9	0x1008 high byte	Timed task 1 execution time (week)	R/W	Bit 0-6 indicates Sunday-Saturday Bit 0 = 0: The timer is not enable on that day Bit 0 = 1: The timing is enable on that day And the like	uint8
	0x1008 low byte	Timed task 1 execution time (hour)		0-23 mean 0-23 o'clock 24 indicates sunrise, 25 indicates sunset	uint8
10	0x1009 high byte	Timed task 1 execution time (minute)	R/W	0-59	uint8
	0x1009 low byte	Operation		Timing task1 operation setting: 00: open/ 01: close	uint8
15-18	0x100E-0x1011	The specific register meaning can refer to the timing task 1			
19-22	0x1012-0x1015	The specific register meaning can refer to the timing task 1			
23-26	0x1016-0x1019	The specific register meaning can refer to the timing task 1			
27-30	0x101A-0x101D	The specific register meaning can refer to the timing task 1			
31-34	0x101E-0x1021	The specific register meaning can refer to the timing task 1			

35-38	0x1022-0x1025	The specific register meaning can refer to the timing task 1
39-42	0x1026-0x1029	The specific register meaning can refer to the timing task 1
43-46	0x102A-0x102D	The specific register meaning can refer to the timing task 1
47-50	0x102E-0x1031	The specific register meaning can refer to the timing task 1
51-54	0x1032-0x1035	The specific register meaning can refer to the timing task 1
55-58	0x1036-0x1030	The specific register meaning can refer to the timing task 1
59-62	0x103A-0x103D	The specific register meaning can refer to the timing task 1
63-66	0x103E-0x1041	The specific register meaning can refer to the timing task 1
67-70	0x1042-0x1045	The specific register meaning can refer to the timing task 1
71-74	0x1046-0x1049	The specific register meaning can refer to the timing task 1
75-78	0x104A-0x104D	The specific register meaning can refer to the timing task 1
79-82	0x104E-0x1051	The specific register meaning can refer to the timing task 1
83-86	0x1052-0x1055	The specific register meaning can refer to the timing task 1
87-90	0x1056-0x1059	The specific register meaning can refer to the timing task 1
91-94	0x105A-0x105D	The specific register meaning can refer to the timing task 1
95-98	0x105E-0x1061	The specific register meaning can refer to the timing task 1
99-102	0x1062-0x1065	The specific register meaning can refer to the timing task 1
103-106	0x1066-0x1069	The specific register meaning can refer to the timing task 1
107-110	0x106A-0x106D	The specific register meaning can refer to the timing task 1
111-114	0x106E-0x1071	The specific register meaning can refer to the timing task 1
115-118	0x1072-0x1075	The specific register meaning can refer to the timing task 1
119-122	0x1076-0x1079	The specific register meaning can refer to the timing task 1
123-126	0x107A-0x107D	The specific register meaning can refer to the timing task 1

7.3.3.2 Special timing address table

Number	Address	Parameter	Read/write	Range	Type
1	0x1100	Reserve			
2	0x1101	Appointment timing task 1 loop setting	R/W	Bit 0-7 indicates channel 1 - 8 Bit 0 = 1: channel 1 is enabled timing Bit 0 = 0: channel 1 is not enabled And the like	uint16
	0x1102 high byte	Timing time (year)	R/W	0-99	uint8

3	0x1102 low byte	Timing time (month)		1-12	uint8
4	0x1103 high byte	Timing time (day)	R/W	1-31	uint8
	0x1103 low byte	Timing time (hour)		0-23	uint8
5	0x1104 high byte	Timing time (minute)	R/W	0-59	uint8
	0x1104 low byte	Operation		Timing task1 operation setting: 00: open 01: close	uint8
6-10	0x1105-0x1109	The specific register meaning can refer to the timing task 1			
11-15	0x110A-0x110E	The specific register meaning can refer to the timing task 1			
16-20	0x110F-0x1113	The specific register meaning can refer to the timing task 1			
21-25	0x1114-0x1118	The specific register meaning can refer to the timing task 1			
26-30	0x1119-0x111D	The specific register meaning can refer to the timing task 1			
31-35	0x111E-0x1122	The specific register meaning can refer to the timing task 1			
36-40	0x1123-0x1127	The specific register meaning can refer to the timing task 1			
41-45	0x1128-0x112C	The specific register meaning can refer to the timing task 1			
46-50	0x112D-0x1131	The specific register meaning can refer to the timing task 1			
51-55	0x1132-0x1136	The specific register meaning can refer to the timing task 1			
56-60	0x1137-0x113B	The specific register meaning can refer to the timing task 1			
61-65	0x113C-0x1140	The specific register meaning can refer to the timing task 1			
66-70	0x1141-0x1145	The specific register meaning can refer to the timing task 1			
71-75	0x1146-0x114A	The specific register meaning can refer to the timing task 1			
76-80	0x114B-0x114F	The specific register meaning can refer to the timing task 1			
81-85	0x1150-0x1154	The specific register meaning can refer to the timing task 1			
86-90	0x1155-0x1159	The specific register meaning can refer to the timing task 1			
91-95	0x115A-0x115E	The specific register meaning can refer to the timing task 1			
96-100	0x115F-0x1163	The specific register meaning can refer to the timing task 1			
101-105	0x1164-0x1168	The specific register meaning can refer to the timing task 1			
106-110	0x1169-0x116D	The specific register meaning can refer to the timing task 1			
111-115	0x116E-0x1172	The specific register meaning can refer to the timing task 1			
116-120	0x1173-0x1177	The specific register meaning can refer to the timing task 1			

7.3.4 Logging address table

7.3.4.1 Power on/off record address table

Number	Address	Parameter	Read/write	Range	Type
1	0x1200 high byte	Year	R	0-99	uint8
	0x1200 low byte	Month	R	1-12	uint8
2	0x1201 high byte	Day	R	1-31	uint8
	0x1201 low byte	Hour	R	0-23	uint8
3	0x1202 high byte	Minute	R	0-59	uint8
	0x1202 low byte	Second	R	0-59	uint8
4	0x1203 high byte	Type	R	0x0F means power on 0xF0 means power off	uint8
	0x1203 low byte	Channel 1-8	R	bit0 indicates channel1; bit7 indicates channel 8; And be like 0 means open 1 means close	uint8
5	0x1204 high byte	Reserve			
	0x1204 low byte	Reserve			
6-10	0x1205-0x1209	The specific register meaning can refer to the task 1			
11-15	0x120A-0x120E	The specific register meaning can refer to the task 1			
16-20	0x120F-0x1214	The specific register meaning can refer to the task 1			
21-25	0x1215-0x1219	The specific register meaning can refer to the task 1			
26-30	0x121a-0x121E	The specific register meaning can refer to the task 1			
31-35	0x121F-0x1224	The specific register meaning can refer to the task 1			
36-40	0x1225-0x1229	The specific register meaning can refer to the task 1			
41-45	0x122A-0x122E	The specific register meaning can refer to the task 1			

46-50	0x122F-0x1234	The specific register meaning can refer to the task 1

7.3.4.2 DI/DO records address table

Number	Address	Parameter	Read/write	Range	Type
1	0x1300 high byte	Year	R	0-99	uint8
	0x1300 low byte	Month	R	1-12	uint8
2	0x1301 high byte	Day	R	1-31	uint8
	0x1301 low byte	Hour	R	0-23	uint8
3	0x1302 high byte	Munite	R	0-59	uint8
	0x1302 low byte	Second	R	0-59	uint8
4	0x1303 high byte	Mark bit	R	0xAA means that the record exists	uint8
	0x1303 low byte	DI/DO status	R	bit0 DI1; bit1 DI2 bit4 DO1; bit5 DO2 0 means open, 1 means close	uint8
5-8	0x1304-0x1307	The specific register meaning can refer to the task 1			
9-12	0x1308-0x130B	The specific register meaning can refer to the task 1			
13-16	0x130C-0x130F	The specific register meaning can refer to the task 1			
17-20	0x1310-0x1313	The specific register meaning can refer to the task 1			
21-24	0x1314-0x1317	The specific register meaning can refer to the task 1			
25-28	0x1318-0x131B	The specific register meaning can refer to the task 1			
29-32	0x131C-0x131F	The specific register meaning can refer to the task 1			
33-36	0x1320-0x1323	The specific register meaning can refer to the task 1			
37-40	0x1324-0x1327	The specific register meaning can refer to the task 1			
41-44	0x1328-0x132B	The specific register meaning can refer to the task 1			
45-48	0x132C-0x1329	The specific register meaning can refer to the task 1			

7.3.4.3 Switch records address table

Number	Address	Parameter	Read/write	Range	Type

1	0x1400 high byte	Year	R	0-99	uint8
	0x1400 low byte	Month	R	1-12	uint8
2	0x1401 high byte	Day	R	1-31	uint8
	0x1401 low byte	Hour	R	0-23	uint8
3	0x1402 high byte	Minute	R	0-59	uint8
	0x1402 low byte	Second	R	0-59	uint8
4	0x1403 high byte	Resource	R		uint8
	0x1403 low byte	Reserve	R		uint8
5	0x1404 high byte	Number of channel	R	0x01 means channel 1 0x08 means channel 8	uint8
	0x1404 low byte	Channel status	R	0 means open 1 means close	uint8
6	0x1405	Control group address	R	When the control instruction comes from ALIBUS, it means the control group address;0x0001 means the control group address 1; 0xFFFF means the control group address 65535; And be like	uint16
7-12	0x1406-0x140B	The specific register meaning can refer to the task 1			
13-18	0x140C-0x1411	The specific register meaning can refer to the task 1			
19-24	0x1412-0x1417	The specific register meaning can refer to the task 1			
25-30	0x1418-0x141D	The specific register meaning can refer to the task 1			
31-36	0x141E-0x1423	The specific register meaning can refer to the task 1			

And so on, there are 600 switch records

8. Troubleshooting

- If the instrument running indicator and screen are not on, check whether the power supply is connected to AC220V, and then check whether the ALIBUS port is short-circuited.
- If data cannot be read over the RS485 port (ModBus-RTU) after power-on, check whether the address and baud rate are the same, and then check the RS485 interface. Check whether there is voltage difference between AB terminals (DC5V±0.5V).
- If the dimming actuator cannot adjust the luminance (the output voltage of the dimming interface does not change), check whether the input voltage of the DC24V power supply of the dimming interface is correct and the connection is reliable.

9. Cautions

- Before using the product, please check whether the appearance is in good condition, and contact with the manufacturer in time if it is damaged.
- Connect the wiring correctly according to the instruction manual. Please check it carefully before power on.
- After connecting the product to the bus, ensure that the operation indicator light is normal. Operate the programming key to ensure that the key is not stuck and the programming light is normal.
- Please keep power off while installation and replacement.

Amendment record

Revised edition	Revision time	Revised terms
V1.0	2023.11	The new version was released

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