10A Multi-Function Actuator (Combo)

Manual-Ver1.1

Content

1 Summary

This manual provides you with detailed technical information of the 10A series multifunctional actuator, including installation and programming details, and explains how to use the 10A series multifunctional actuator based on practical examples. The multi-functional actuator is a modular installation device. In order to facilitate installation into the distribution box, it is designed according to EN60715 and can be installed on the 35mm Din rail. The device uses screw terminals to realize electrical connection, and the bus connection is directly connected through EIB terminals.

The multi-function actuator is a multi-output module that integrates a variety of output functions, including switch output, curtain DC/AC output, fan output and valve output. The functions of this module can be freely configured according to the needs, such as a part of the output is used to control the switch, a part of the output is used to control the curtain, and a part of the output is used to control the fan, etc. The entire system is set up and operated by ETS.

2 Product and Feature Overview

The 10A series multi-function actuator is a modular installation device, which is a multi-channel output module and integrates a variety of output functions. Connect to the EIB / KNX system through the EIB bus terminal block, and use the engineering design tool software ETS software (version ETS4.0 or above) to assign physical addresses and set parameters.

The maximum load current output by the multi-function actuator is 10A. One relay in the device represents one output, a total of 24 outputs. Some functions may require multiple outputs. For example, one curtain AC output requires two relay outputs, one relay is used to control the forward rotation, one is used to control the reverse rotation, and the ordinary switch output needs to occupy one relay output. Therefore, in the process of engineering application, select products according to actual needs.

Each circuit of the multifunctional actuator can independently control the switch of 2000W lamps. The above is only for resistive load lamps. In actual use, it is more appropriate to drive resistive loads at 80% of the power. For inductive loads and capacitive loads, especially in the case of multiple lamps connected in parallel, the load that can be carried will be reduced. Although the power remains unchanged, the instantaneous inrush current will increase, which will easily melt the relay contacts. Therefore, for inductive load and capacitive load, it is generally appropriate to use 1/5 or 1/6 of the maximum current, and even some inferior LED lamp loads need to use 1/8 of the maximum current.

The multi-functional actuator is equipped with manual control buttons, among which the LED indicates the switch status of each circuit, which can be more convenient for engineering debugging. In addition, the multi-functional actuator also has 4 dry contact input interfaces, and the communication distance of dry contact (I/O) wiring is less than 10m.

Functional overview is as follows:

Switch Output	Fan Coil Output	Curtain Output
(1) Independently control 24 loop lamps/loads;	(1) With 6 independent outputs;	(1) With 12 independent outputs;
(2) With manual switch control;	(2) With manual switch control;	(2) With manual switch control;
(3) With relay magnetic holding function;	(3) With relay magnetic holding function;	(3) Scene combination control function can be set;
(4) With delay on/off function;	(4) With delay on/off function;	(4) With on-site save and restore functions;
(5) It has the function of timing off and cycle switch;	(5) Control the 4 coils system and 2 coils system;	(5) Status value query and reply function;
(6) With on-site save and restore functions;	(6) It can output heating and cooling according to automatic or manual control, and has the interlock function of heating and cooling;	(6) The selection function of the relay switch state after the bus voltage is restored;
(7) It has the function of status value query and reply;	(7) According to the automatic or manual control of high, medium and low wind speed, it has the function of wind speed interlocking;	(7) It is possible to set the time interval to cycle open or close;
(8) It has scene combination control and scene learning functions;	(8) Selection function of relay status after bus power failure and voltage recovery;	(8) It has an I/O dry contact input interface, which can input control commands such as switches, curtains, dimming, and scenes, and can directly link fire emergency lighting;
(10) With interlocking group function and channel lock function;	(9) The local wind speed and valve status can be reported;	(9) Scope of use: opening and closing curtains, projection screens, venetian blinds, rolling shutters, lifters, etc.;
(12) It has the function of selecting the relay switch state after bus power failure and voltage recovery;	(10) It has an I/O dry contact input interface, which can input control commands such as switches, curtains, dimming, and scenes, and can directly link fire emergency lighting;	
(13) It has an I/O dry contact input interface, which can input control commands such as switches, curtains, dimming, and scenes, and can directly link fire emergency lighting;		

3 Specification

| Bus voltage	21-30 VDC
Quiescent Current	≤ 12mA
Recharging current	≤ 20mA
Static power	≤360mW
Charging power consumption	≤ 600mW
Main output	24 loops, each loop 250VAC (50/60Hz), Max 10A (resistive load)
Dimension (Lx W x H)	218mm x 90mm x 64mm
Weight(approx.)	0.74KG
Shell material	PA66
Installation	35MM DIN Rail
Working temperature	-5°C…+45°C
Stock temperature	-25°C…+55°C
Transport temperature	-25°C…+70°C
Relative humidity	max 90%

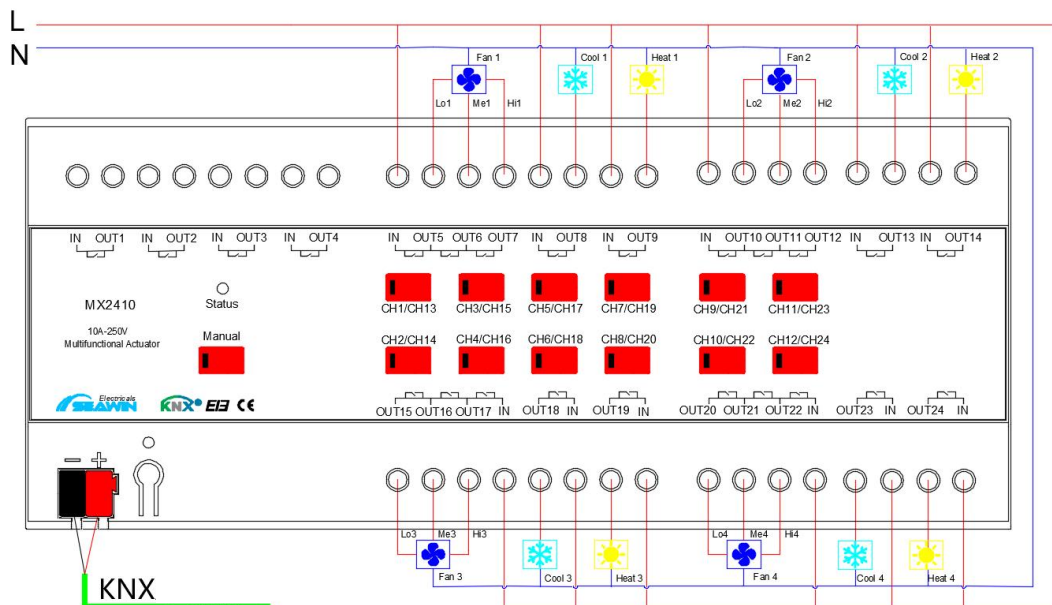# 4 Dimension and wiring diagrams

4.1 Dimension (24-fold)
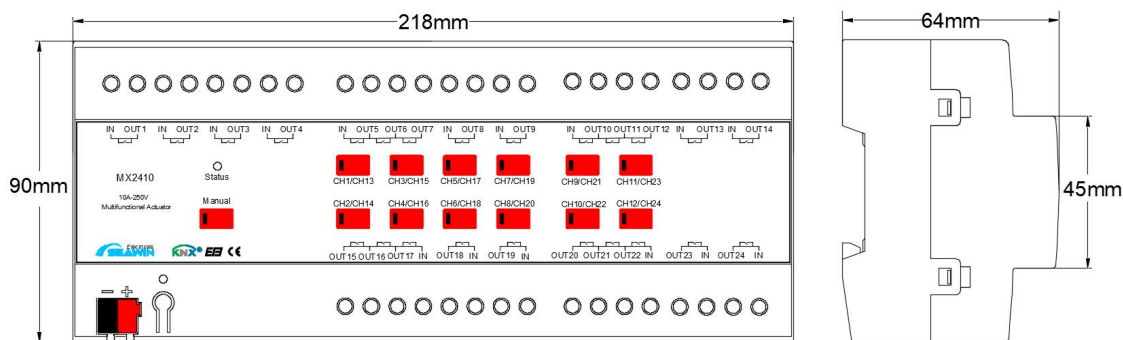
4.2 Wiring diagrams
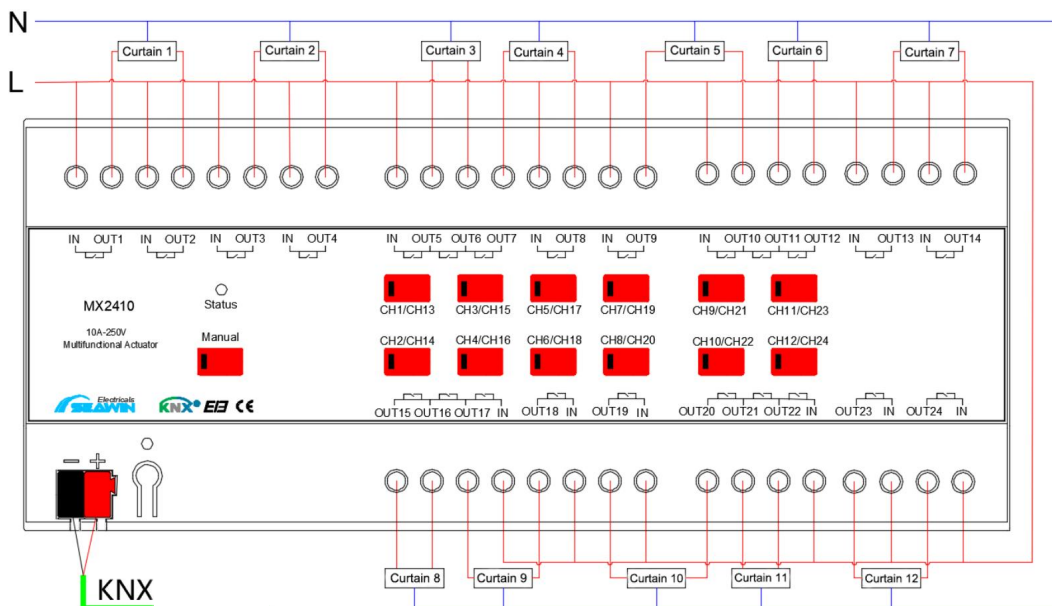
4.2.1 Switch output

Electricals
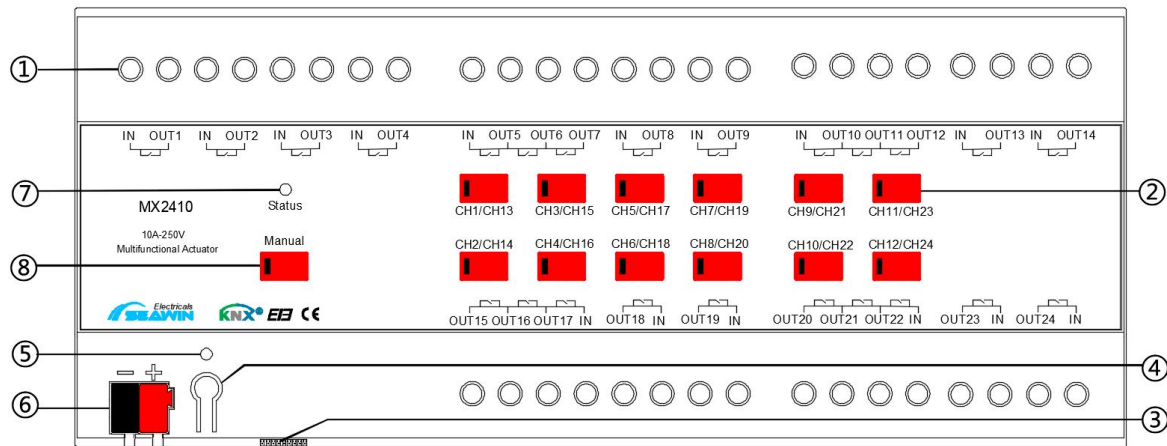**SEAWIN**
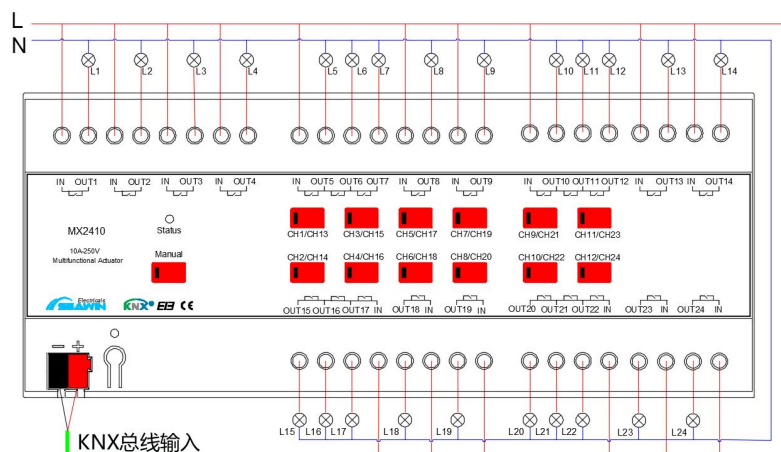
4.2.2 Fan Coil output

4.2.3 Curtain output

5 Parameter setting and communication object description

5.1 MX2410

①Description: Relay output terminals: one in and one out, the aperture can be connected to φ4 wires;

②Description: Each circuit control button, manual operation, short press the button, the circuit relay will do the reverse operation (when the relay is closed, the indicator light on the button is on, and the indicator light is off when it is disconnected);

③Description: Dry contact input terminals;

④Description: programming button, short press the button to enter programming mode;

⑤Description: Programming indicator light, when the indicator light is red, the device is in the programming state, when the device is programmed or working normally, the indicator light is off;

⑥Description: KNX terminal block, KNX bus connection, the red line is connected to "+", and the black line is connected to "-";

⑦Note: Status is the status indicator of the device power supply. When the indicator is green, the bus power supply status of the device is normal;

⑧Explanation: Manual is the circuit switching button, short press the button, the indicator light on the button can be switched to red and orange, when the indicator light on the button is red, it can control the CH1~CH12 circuit; when the button on the button When the indicator light is switched to orange, it can control the CH13-CH24 circuit

6 Parameter setting and communication object description

6.1 Switching Function

Let's take ETS5 as an example, and set parameters in ETS5. Note: In the following introduction, Channel X or X represents the output of the corresponding channel.

1) Open the 10A series multifunctional actuator parameter setting interface in ETS5, as shown in Figure 6.1.1. The parameter "Channel X" indicates the output of the corresponding channel. The parameter "Field control" indicates the field control function. When the "Off" command is sent, the relay status of each channel is saved and closed. When the "On" command is sent, the last saved relay status is

recalled. (Note: The "Off" command cannot be sent twice consecutively, because when the "Off" command is sent for the first time, the current state is saved, but when the "Off" command is sent for the second time, the "off" command sent for the first time will be saved. The fully closed state after the "Off" command overwrites the state of the scene saved for the first time).

Options: Disabled, Enabled

Select the corresponding channel and set it, for example, 4 folds, turn on the "Enabled" from channel 1-4.

14 channel multi-function actuator with 2 folds dry contact input interface, 8 /12 /16 /20 /24 channel multi-function actuator with 4 folds dry contact input interfaces (here we take 8 channel multi-function actuator as an example)
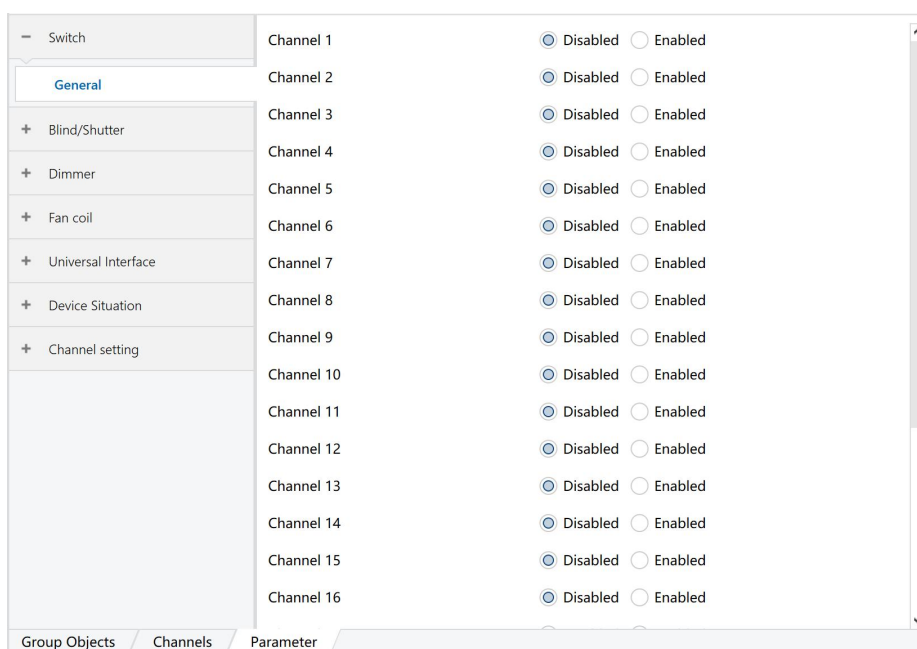

Figure 6.1.1

2) 2) After the setting is completed, the interface is shown in Figure 6.1.2, and there are 8 options in the red box as shown in the figure.
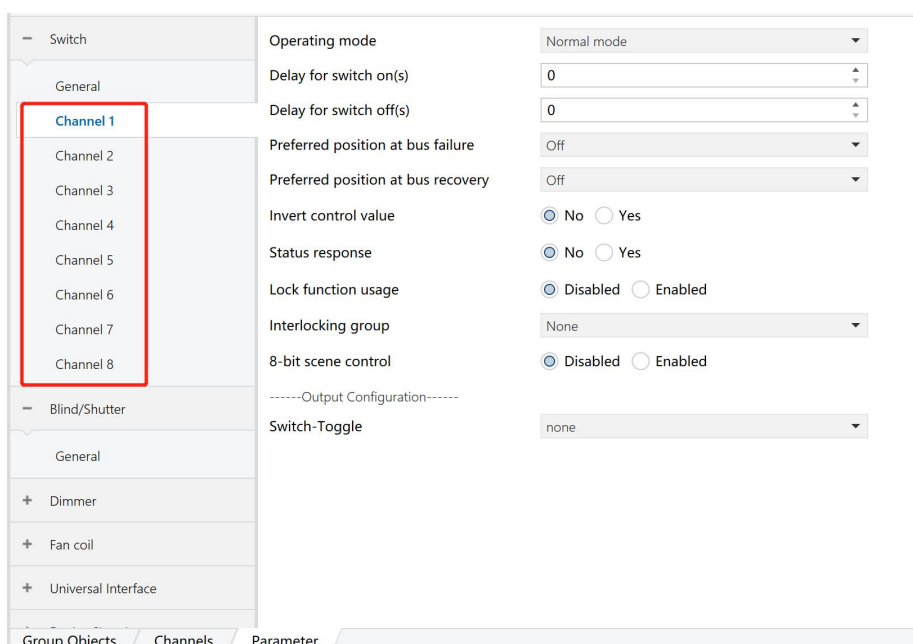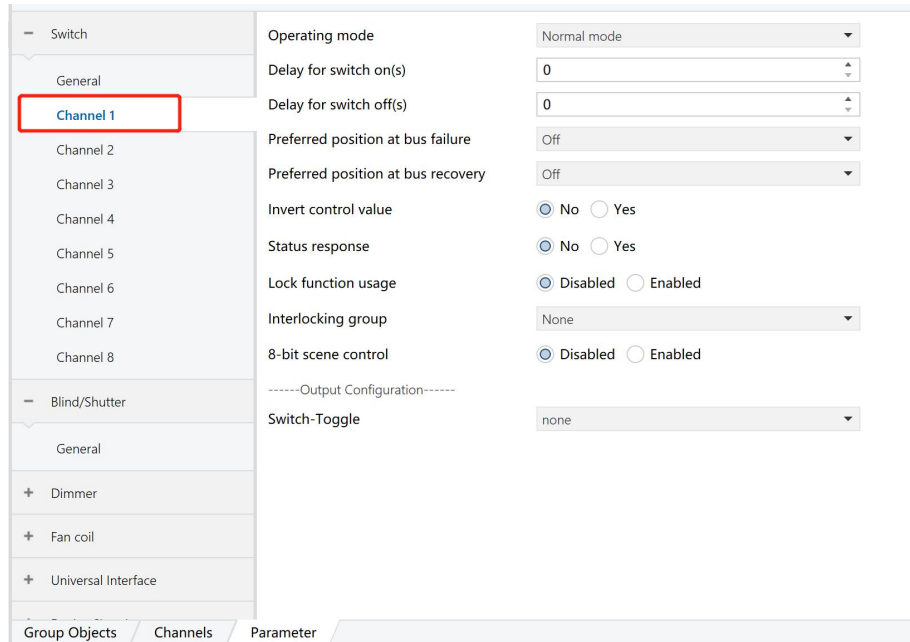
Figure 6.1.2

3）Click the options in the above red box to set the parameters of each circuit respectively. The following takes Channel 1 as an example, as shown in Figure 6.1.3

Figure 6.1.3

4）Function of "Operating mode" would have 3 modes: Normal mode, Time mode and Cycle mode

6.1.1 Normal mode

Specification	Description
Delay for switch on	Options: 0-255 seconds, e.g. choose 5s. When send commend of "on", the corresponding circuit will execute the relay opening after 5s.
Delay for switch Off	Options: 0-255 seconds, e.g., choose 5s. When send commend of "off", the corresponding circuit will execute the relay closing after 5s.
Preferred position at bus failure	Options: Off, On, As before voltage failure；
Preferred position at bus recovery	Options: Off, On, As before voltage failure；
Invert control value	Options: No, yes; e.g., when you choose "NO", the commend send with "Yes"
Status response	Options: No, yes. When choose "Yes", will enable the following feature configurations: 1. "Transmission of status", Options: ①using read request Only; ②On change in status; ③always in operation； 2. "Invert status feedback", Options: No, yes. When choose "Yes", the feedback is off when the

	relay is on, and the feedback is on when the relay is off;
Lock function usage	Lock the on/off state of the corresponding channel relay to invalidate its control on the bus, Options：Enabled, Disabled. When choose "Enabled", will enable the following feature configurations 1. "The polarity of the lock", Options： Lock with "1", Unlock with "0"、 Lock with "0", Unlock with "1"； 2. "Lock start position", options: No reaction, Off, On； 3. Lock end position", options: No reaction, Off, On；
Interlocking group	Options: None, group1, group2, … group12；e.g., Channel 1& Channel 2 belong to group1, if Channel 1 is in "on" status, then Channel 2 would be "off" status, and vice versa, the two are interlocked
8-bit scene control	Options: Enabled, Disabled. When choose "Enabled", the "scene" option appears on the corresponding channel on the left side of the interface, click "scene", and the interface is switched as shown in Figure 6.1.4. The function configuration in the interface is as follows： 1. "Overwrite values stored in the device during ETS download", Options: ①Overwrite, ②Not rewrite; 2. "Delay time before operation", Options: 1-127 3. "Scene assignment 1-64", can be set to 1-64； 4. "Output Value", Options: On, Off； 5. "Storage value for Scene assignment X" indicates the scene learning function of scene number X, (X:1~64), options: No, yes. e.g., Channel 1 and Channel 2 in the parameter "Scene assignment 1[1-64] "Select" 1", "Storage value for Scene assignment 1" select "Yes", the communication object takes the group address 3/1/1 as an example, after downloading the data, first manually operate CH1 and CH2 on the execution module as On state, enter the group address 3/1/1 at the "Diagnostics" on the ETS, then select "Learn" in the "Value", select "1" for the scene number, and send it on the bus, the scene number "1" The state of learning actuator CH1 and CH2 On is completed.
Switch-Toggle	Options: ①None, ②Output1-24

Figure 6.1.4

6.1.2 Time mode

Specification	Description
Time mode after voltage recovery	Options: On, Off, as before voltage failure
On time for time mode	Options: 1 seconds, 2 seconds....120 minutes; e.g.： choose "10s", relays on, then it would be automatically off after 10s；
preferred position at bus failure	Options: On，Off，unchanged；
preferred position at bus recovery	Options: On，Off，unchanged；
Invert control value	Options: No，Yes；e.g., when choose "No", then the control sends "Yes";
Status response	Options: No, Yes，When you choose "Yes", establish the function 1.Transmission of status, Options: ①using read request Only, ②On change in status, ③always in operation；Function configuration 2. Invert status feedback, Options: No, Yes, when you choose " Yes", feedback is off when the relay is on, and the feedback is on when the relay is off;
Lock function usage	The use of the channel lock function locks the on/off state of the corresponding channel relay to make it invalid on the bus. Options: Enabled, Disabled. When "Enabled" is selected, the following function

	configuration is enabled:
	1. The polarity of the lock, Options: Lock with "1", Unlock with "0", Lock with "0", Unlock with "1";
	2.Lock start position, Options: No reaction, Off, On;
	3.Lock end position, Options: No reaction, Off, On;
Interlocking group	Options: Disabled, group1, group2, … group12; e.g., Channel 1& Channel 2 belongs to group1, If Channel 1is in "On" Status, then Channel 2will turn to "Off" Status, and vice versa, the two are interlocked
8-bit scene control	Options: Enabled, Disabled, when you choose "Enabled", The "scene" option appears on the corresponding channel on the left side of the interface, click "scene", and the interface is switched as shown in Figure 6.1.4 above. The function configuration in the interface is as follows: 1. Overwrite values stored in the device during ETS download, Options: ①Overwrite, ②Not rewrite; 2. Delay time before operation, Options: 1-127s; 3. Scene assignment 1- 64; 4. Output Value, Options: On, Off; 5. Storage value for Scene assignment X, (X:1~64). Options: No, Yes. E.g.: when Channel 1 and Channel 2 select "1" in the parameter "Scene assignment 1[1-64]" and select "Yes" in "Storage value for Scene assignment 1", the communication object is group address 3/1/1 For example, after downloading data is completed, manually operate CH1 and CH2 on the execution module to be On, enter the group address 3/1/1 at the "Diagnosis" on the ETS, and then select "Learn" in "Value", Select "1" for the scene number and send it on the bus, then the scene number "1" will learn the status of actuators CH1 and CH2 On.
Switch-Toggle	Options: ①None, ②Output1-24

6.1.3 Cycle mode

Specification	Description
Cycle mode after voltage recovery	Options: On, Off, as before voltage failure
On time for cycle	Options: 10seconds, 15seconds...120minutes;
Off time for cycle	Options:10seconds, 15seconds...120minutes;
preferred position at bus failure	Options: On, Off, unchanged;
preferred position at bus recovery	Options: On, Off, unchanged;

Invert control value	Options: No, Yes; Example: When "No" is selected, the control emits "Yes";
Status response	Options: No, Yes; When "Yes" is selected, the following feature configurations are enabled: 1. Transmission of status, Options: using read request Only, On change in status, always in operation; 2. Invert status feedback, Options: No、Yes, 选择"Yes"时，继电器开时反馈关，关时反馈开;
Lock function usage	Lock the on/off state of the corresponding channel relay to make it invalid on the bus, optional: Enabled, Disabled; when you choose "Enabled", enabled below function: 1.The polarity of the lock, Options: Lock with "1", Unlock with "0",Lock with "0", Unlock with "1"; 2. Lock start position, Options: No reaction, Off, On; 3.Lock end position, Options: No reaction, Off, On;
8-bit scene control	Options: Enabled, Disabled, when you choose "Enabled", The "scene" option appears on the corresponding channel on the left side of the interface, click "scene", and the interface is switched as shown in Figure 6.1.4 above. The function configuration in the interface is as follows: 1. Overwrite values stored in the device during ETS download, Options: ①Overwrite, ②Not rewrite; 2. Delay time before operation, Options: 1-127s; 3. Scene assignment 1- 64; 4. Output Value, Options: On, Off; 5. Storage value for Scene assignment X, (X:1~64). Options: No, Yes. E.g.: when Channel 1 and Channel 2 select "1" in the parameter "Scene assignment 1[1-64]" and select "Yes" in "Storage value for Scene assignment 1", the communication object is group address 3/1/1 For example, after downloading data is completed, manually operate CH1 and CH2 on the execution module to be On, enter the group address 3/1/1 at the "Diagnosis" on the ETS, and then select "Learn" in "Value", Select "1" for the scene number and send it on the bus, then the scene number "1" will learn the status of actuators CH1 and CH2 On.

	Options: Disabled, group1, group2, … group12；e.g., Channel 1& Channel 2 belongs to group1,
Interlocking group	If Channel 1is in "On" Status, then Channel 2will turn to "Off" Status, and vice versa, the two are interlocked
Switch-Toggle	Options: ①None, ②Output1-24

6.2 Curtain Function

1）As shown in Figure 6.2.1, the "Blind Shutter" fan function module has 12 Channels, and the options are: "Disabled", "Enabled"
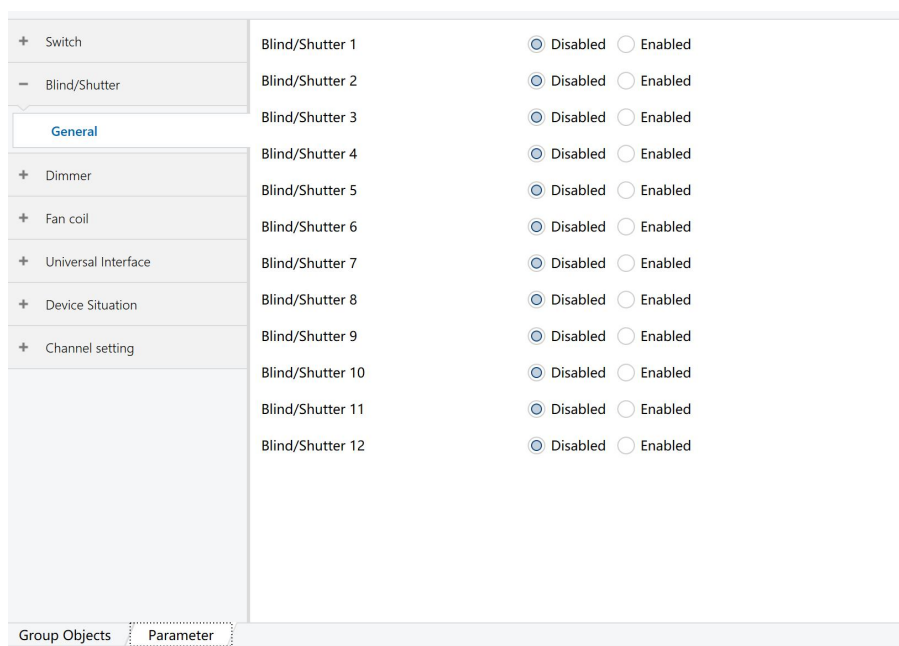
Figure 6.2.1

2）As shown in Figure 6.2.2, after the fan is enabled, the function configuration of the fan will appear on the right. The following takes Blind Shutter 1 as an example
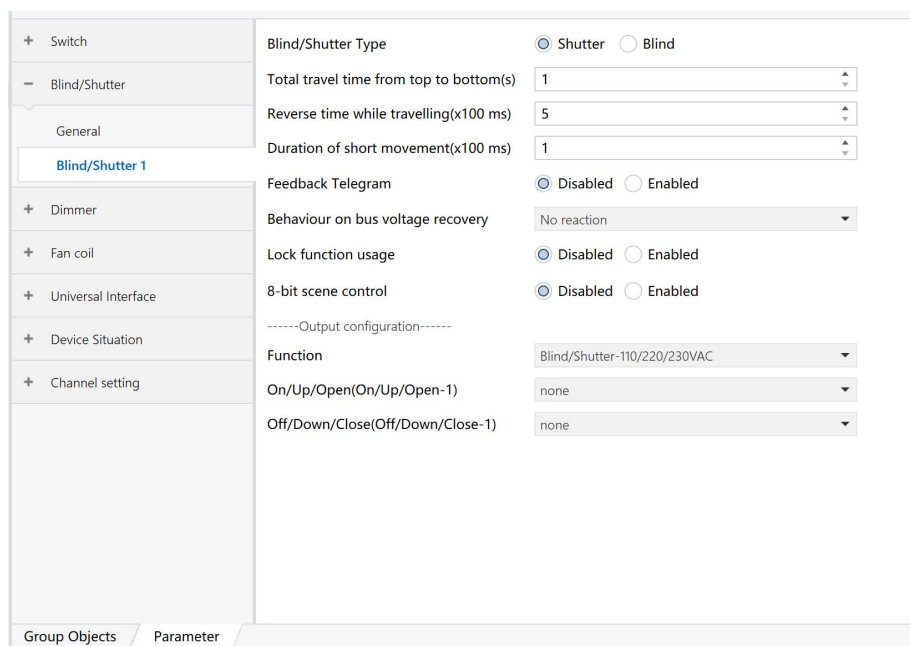
Figure 6.2.2

3）Function configuration "Blind/Shutter Type" is divided into two modes: Shutter, Blind

6.2.1 Shutter

Specification	Description
Total travel time from top to bottom(s)	The time required for the curtain to fall from up to down, options: 1, 2, 3...255;
Reverse time while travelling(x100ms)	Indicates the total travel time of curtain reversal, options: 5, 6, 7...255;
Duration of short movement(x100ms)	Indicates the time for the motor to rotate each time a command is sent during jog control. Can be filled: 1, 2, 3...255;
Feedback Telegram	Indicates status feedback, Options: Disabled, Enabled; When you choose "Enabled", will enabled below function setting: 1. Send feedback On change, Options: No, Yes； 2. Send feedback in cycles on movement, Options: No, Yes; When you choose "yes", feature configuration will appear. The time in cycles, Options: 1, 2, 3… 15s; 3. Invert status feedback, Options：No，Yes；When "Yes" is selected, the feedback is off when the relay is on, and the feedback is on when the relay is off;
Behavior On bus voltage recovery	Options：Move upwards，Move downwards，No reaction；

Lock function usage	Lock the on/off state of the corresponding channel relay to make it invalid on the bus, optional： Enabled, Disabled; when you choose "Enabled", enabled below function： 1.The polarity of the lock，Options：Lock with "1", Unlock with "0",Lock with "0", Unlock with "1"; 2. Lock start position, Options: No reaction, Off, On； 3.Lock end position, Options: No reaction, Off, On；
8-bit scene control	Options: Enabled, Disabled, when you choose "Enabled", The "scene" option appears on the corresponding channel on the left side of the interface, click "scene", and the interface is switched as shown in Figure 6.1.4 above. The function configuration in the interface is as follows: 1. Overwrite values stored in the device during ETS download, Options: ①Overwrite, ②Not rewrite； 2. Delay time before operation, Options: 1-127s; 3. Scene assignment 1- 64； 4. Output Value, Options: On, Off； 5. Storage value for Scene assignment X，(X:1~64). Options: No, Yes. E.g.: when Channel 1 and Channel 2 select "1" in the parameter "Scene assignment 1[1-64]" and select "Yes" in "Storage value for Scene assignment 1", the communication object is group address 3/1/1 For example, after downloading data is completed, manually operate CH1 and CH2 on the execution module to be On, enter the group address 3/1/1 at the "Diagnosis" on the ETS, and then select "Learn" in "Value", Select "1" for the scene number and send it on the bus, then the scene number "1" will learn the status of actuators CH1 and CH2 On.

Figure 6.2.3

4) In the relay function configuration part, "function" is divided into six function modes: "Blind/Shutter-110/220/230VAC",

"Blind/Shutter-24VDC (2relay)", "Blind/Shutter-24VDC(4relay)", "Blind/Shutter-Dry contact 1(2relay)", "Blind/Shutter-Dry contact

2(2relay)", "Blind/Shutter-Dry contact 3(3relay)"

Specification	Description
Blind/Shutter-110/220/230 VAC	Indicates that the AC voltage is 110V/220V/230V, and the following function configurations are enabled: 1. "On/Up/Open" indicates the opening of the relay, options: None, output1, output2...output24 2. "Off/Down/Close" indicates the closing of the relay, options: None, output1, output2...output24
Blind/Shutter-24VDC (2relay)	Indicates that the DC voltage is 24VDC (2 relays), and the following functional configurations are enabled: 1. "On/Up/Open" indicates the opening of the relay, options: None, output1, output2...output24 2. "Off/Down/Close" indicates the closing of the relay, options: None, output1, output2...output24
Blind/Shutter-24VDC(4relay)	Indicates that the DC voltage is 24VDC (4 relays), and the following functional configurations are enabled: 1. "On/Up/Open" indicates the opening of the relay, options: None, output1, output2...output24 2. "On/Up/Open-2" indicates the opening of the relay, options: None, output1, output2...output24 3. "Off/Down/Close" indicates the closing of the relay, options: None, output1, output2...output24 4. "Off/Down/Close-2" indicates the closing of the relay, options: None, output1, output2...output24
Blind/Shutter-Dry contact 1(2relay)	Indicates dry contact 1 (2 relays), enabling the following functional configurations: 1. "On/Up/Open" indicates the opening of the relay, options: None, output1, output2...output24 2. "Off/Down/Close" indicates the closing of the relay, options: None, output1, output2...output24
Blind/Shutter-Dry contact 2(2relay)	Indicates dry contact 2 (2 relays), enabling the following functional configurations: 1. "On/Up/Open" indicates the opening of the relay, options: None, output1, output2...output24 2. "Off/Down/Close" indicates the closing of the relay, options: None, output1, output2...output24
Blind/Shutter-Dry contact 3(3relay)	Indicates dry contact 3 (3 relays), enabling the following functional configurations: 1. "On/Up/Open" indicates the opening of the relay, options: None, output1, output2...output24

2. "Off/Down/Close" indicates the closing of the relay, options: None, output1, output2...output24

3. "Stop" means stop, options: None, output1, output2...output24

6.2.2 Blind

Specification	Description
Slat total turn duration (0...180°, x100 ms)	Indicates the time of the total turning angle of the shutter blades, options: 1, 2, 3...255
Slat position for lower end point	Indicates the gap adjustment between the shutter blades, options: 1, 0%, 100%
Total travel time from top to bottom(s)	The time required for the curtain to fall from up to down, options: 1, 2, 3...255;
Reverse time while travelling(x100ms)	Indicates the total travel time of curtain reversal, options: 5, 6, 7...255
Duration of short movement(x100ms)	Indicates the time for the motor to rotate each time a command is sent during jog control. Can be filled: 1, 2, 3...255;
Feedback Telegram	Indicates status feedback, options: Disabled, Enabled, when Enabled is selected, the following function configurations are enabled: 1. "Send feedback on change" means to send feedback when the state changes, options: No, Yes; 2. "Send feedback in cycles on movement" means to set the cycle to send feedback, options: No, Yes, select Yes, the function configuration will appear "The time in cycles" means the time to send feedback in cycles, options 1, 2, 3 ... 15s; 3. "Invert status feedback" indicates the function of feedback inversion, options: No, Yes, when "Yes" is selected, the feedback is off when the relay is on, and the feedback is on when the relay is off;
Behavior On bus voltage recovery	Indicates the bus voltage recovery status after power failure, options: Move upwards, Move downwards, No reaction;
Lock function usage	The use of the channel lock function locks the on/off state of the corresponding channel relay to make it invalid on the bus. Options: Enabled, Disabled. When "Enabled" is selected, the following function configuration is enabled: 1. The parameter "The polarity of the lock" is the polarity of the lock, options: Lock with "1", Unlock with "0", Lock with "0", Unlock with "1";

	2. The parameter "Lock start position" is the starting position of the lock, options: No reaction, Off, On; 3. The parameter "Lock end position" is the end position of the lock, options: No reaction, Move upwards, Move downwards;
8-bit scene control	Scene control function, optional options: Enabled, Disabled, when "Enabled" is selected, the "scene" option appears on the corresponding channel on the left side of the interface, click "scene", the interface switches to the same as shown in Figure 6.2.3 above. Function configuration in the interface 1. "Overwrite values stored in the device during ETS download" means overwriting the scene values stored in the device during ETS download, options: ① parameter Overwrite, ② parameter Not rewrite; 2. "Delay time before operation" means the delay time before operation, the option is "1-127" seconds 3. "Scene assignment 1-64" indicates the setting of the scene number, and the scene number can be set to 1-64; 4. "Output Value" indicates the output value of the channel operation corresponding to the scene number, options: On, Off; 5. "Storage value for Scene assignment X" indicates the scene learning function of scene number X, (X: 1~64), options: No, Yes. For example: when Channel 1 and Channel 2 select "1" in the parameter "Scene assignment 1[1-64]" and select "Yes" in "Storage value for Scene assignment 1", the communication object is group address 3/1/1 For example, after downloading data is completed, manually operate CH1 and CH2 on the execution module to be On, enter the group address 3/1/1 at the "Diagnosis" on the ETS, and then select "Learn" in "Value", Select "1" for the scene number and send it on the bus, then the scene number "1" will learn the status of actuators CH1 and CH2 On.

5）In the relay function configuration part, "function" is divided into six function modes: "Blind/Shutter-110/220/230VAC", "Blind/Shutter-24VDC (2relay)", "Blind/Shutter-24VDC(4relay)", " Blind/Shutter-Dry contact 1(2relay)", "Blind/Shutter-Dry contact 2(2relay)", "Blind/Shutter-Dry contact 3(3relay)"

Specification	Description
Blind/Shutter-110/220/230 VAC	Indicates that the AC voltage is 110V/220V/230V, and the following function configurations are enabled: 1. "On/Up/Open" indicates the opening of the relay, options: None, output1, output2...output24

	2. "Off/Down/Close" indicates the closing of the relay, options: None, output1, output2...output24
Blind/Shutter-24VDC (2relay)	Indicates that the DC voltage is 24VDC (2 relays), and the following functional configurations are enabled: 1. "On/Up/Open" indicates the opening of the relay, options: None, output1, output2...output24 (1-24 relays) 2. "Off/Down/Close" indicates the closing of the relay, options: None, output1, output2...output24 (1-24 relays)
Blind/Shutter-24VDC(4relay)	Indicates that the DC voltage is 24VDC (4 relays), and the following functional configurations are enabled: 1. "On/Up/Open" indicates the opening of the relay, options: None, output1, output2...output24 2. "On/Up/Open-2" indicates the opening of the relay, options: None, output1, output2...output24 (1-24 relays) 3. "Off/Down/Close" indicates the closing of the relay, options: None, output1, output2...output24 (1-24 relays) 4. "Off/Down/Close-2" indicates the closing of the relay, options: None, output1, output2...output24 (1-24 relays)
Blind/Shutter-Dry contact 1(2relay)	Indicates dry contact 1 (2 relays), enabling the following functional configurations: 1. "On/Up/Open" indicates the opening of the relay, options: None, output1, output2...output24 2. "Off/Down/Close" indicates the closing of the relay, options: None, output1, output2...output24 (1-24 relays)
Blind/Shutter-Dry contact 2(2relay)	Indicates dry contact 2 (2 relays), enabling the following functional configurations: 1. "On/Up/Open" indicates the opening of the relay, options: None, output1, output2...output24 2. "Off/Down/Close" indicates the closing of the relay, options: None, output1, output2...output24 (1-24 relays)
Blind/Shutter-Dry contact 3(3relay)	Indicates dry contact 3 (3 relays), enabling the following functional configurations: 1. "On/Up/Open" indicates the opening of the relay, options: None, output1, output2...output24 2. "Off/Down/Close" indicates the closing of the relay, options: None, output1, output2...output24 3. "Stop" means stop, options: None, output1, output2...output24 (1-24 relay)

6.3 Dimming function （No available）

1）As shown in Figure 6.3.1, the "Dimmer" fan function module has 8 Channels, options: Disabled, Enabled
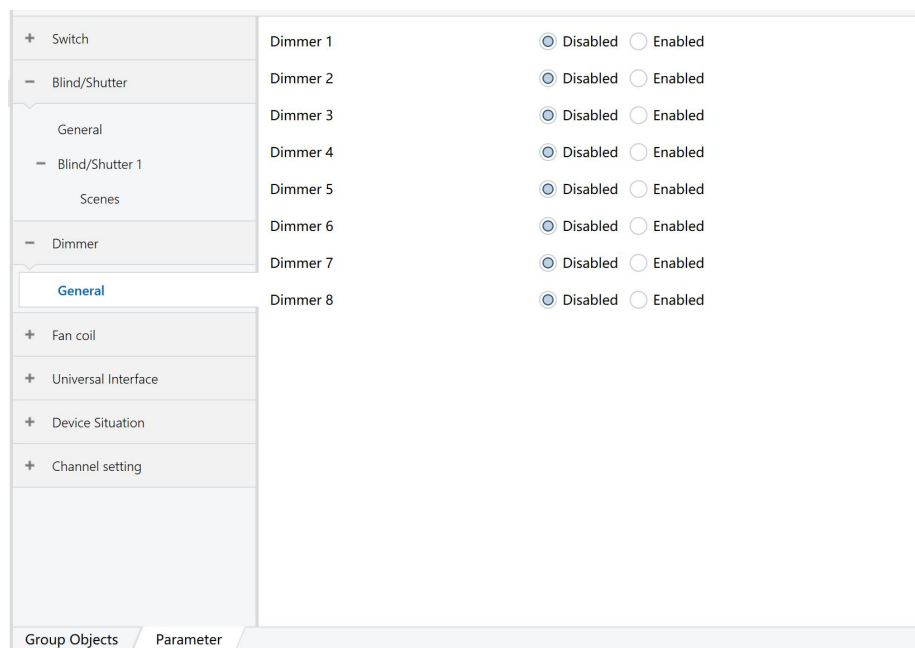
Figure 6.3.1

2）As shown in Figure 6.3.2, after dimming is enabled, the function configuration about dimming will appear on the right, and Dimmer1 is

taken as an example below
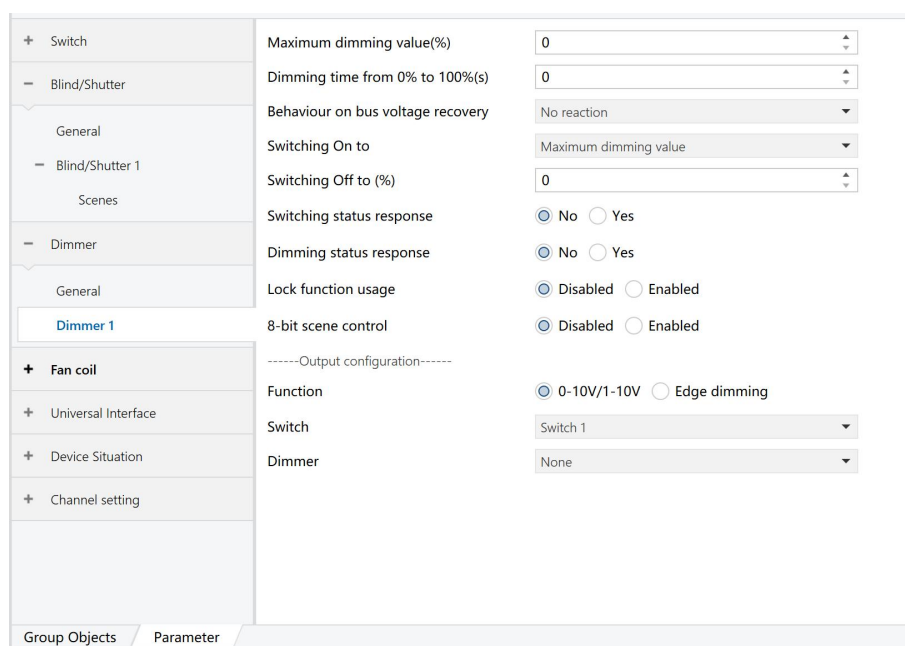
Figure 6.3.2

Specification	Description
Maximum dimming value	Options: 0%, 1%, 2%......100%；
Dimming time from 0% to 100%（s）	Indicates the time required for dimming from 0% to 100%, can be filled in: 0, 1, 2, 3...255
Behavior On bus voltage recovery	The action of the dimming actuator after the voltage recovers, options: no reaction, "dimming up, dimming down, as before bus voltage failure

Switching On to	Indicates the dimming value when the dimming is pressed, optional: maximum dimming value, last dimming value, assigned dimming value; when the assigned dimming value is selected, enable the function configuration Switching On value, optional: 1%, 2%, 3 %...100%
Switching Off to	Indicates the dimming value when pressing the dimming off, optional: 1%, 2%, 3%...100%
Switching status response	Indicates the switch status feedback, options: Yes, No. When Yes is selected, the function configuration is enabled: Transmission of switching status, options: using read request Only, always in operation, On change in status
Dimming status response	Indicates dimming status feedback, options: Yes, No. When Yes is selected, the function configuration is enabled: Transmission of switching status, options: using read request Only, always in operation, On change in status
Lock function usage	The use of the channel lock function locks the on/off state of the corresponding channel relay to make it invalid on the bus. Options: Enabled, Disabled. When "Enabled" is selected, the following function configuration is enabled: 1. "The polarity of the lock" is the polarity of the lock, options: Lock with "1", Unlock with "0", Lock with "0", Unlock with "1"; 2. "Lock start position" is the starting position of the lock, options: No reaction, Switch Off all outputs; 3. "Lock end position" is the end position of the lock, options: No reaction, Switch Off all outputs;
8-bit scene control	Scene control function, optional options: Enabled, Disabled, when "Enabled" is selected, the "scene" option will appear on the corresponding channel on the left side of the interface, click "scene", and the interface will switch as shown in Figure 6.3.3. Function configuration in the interface 1. "Overwrite values stored in the device during ETS download, options: Overwrite, Not rewrite; 2. Delay time before operation, optional "1-127" seconds 3. Scene assignment 1- 64" indicates the setting of the scene number, and the scene number can be set to 1-64; 4. "Output Value" options: On, Off; 5. "Storage value for Scene assignment X" (X:1~64), options: No, Yes; for example: Channel 1 and Channel 2 in the parameter "Scene assignment 1[1-64]" select "1", " "Storage value for Scene assignment 1" When "Yes" is selected, the communication object takes the group address 3/1/1 as an example. After the data download is completed, manually operate CH1 and CH2 on the execution module to be On, and on the ETS" In "Diagnosis", enter the group address 3/1/1, then select "Learn" in "Value", select "1" for the scene number, and send it on the bus, then the scene number "1" learns the actuators CH1 and CH2 On status is complete.

Figure 6.3.3

6.4 Fan Coil Function
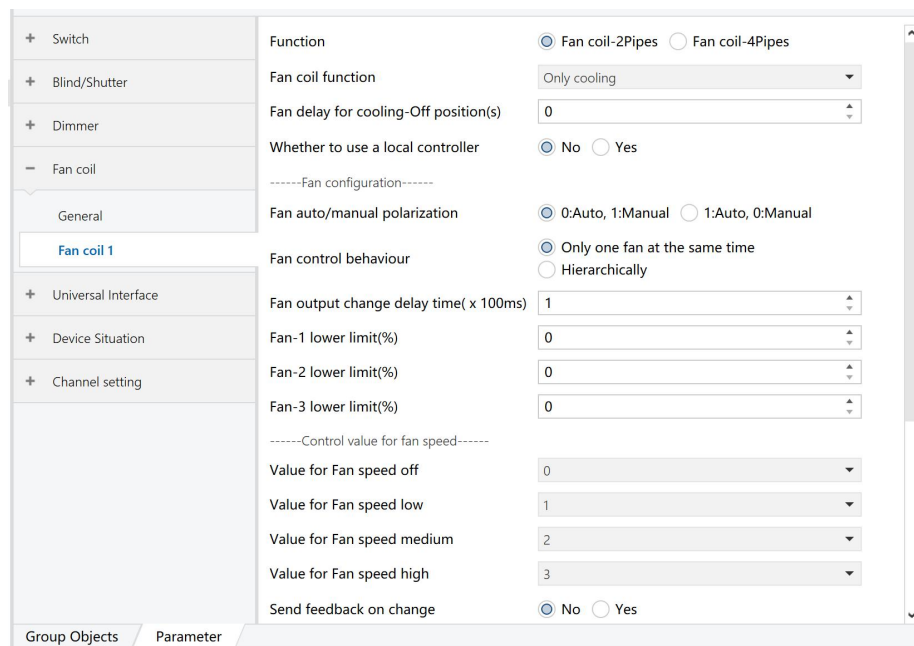
1）As shown in Figure 6.4.1, the "Fan coil" fan function module has 12 Channels, and the options are: "Disabled" to enable, "Enabled" to disable

Figure 6.4.1

2）As shown in Figure 6.4.2, after the fan coil is enabled, the function configuration of the fan coil will appear on the right side. The following takes Fan coil 1 as an example

Figure 6.4.2

3) The function "function" is divided into two modes: Fan coil-2Pipes (valve: 2relay, fan: 3relay), Fan coil-4Pipes (valve: 4relay, fan: 3relay)

6.4.1 Fan coil-2Pipes (valve: 2relay, fan: 3relay)

When "Function" selects "(Fan coil-2Pipes (valve:2relay, fan:3relay))":

Specification	Description
Fan coil function	Indicates the fan coil function mode selection, options: "Only cooling" default option, "Only heating", "Cooling & Heating" 1. Select "Only heating": select the heating mode to enable the following function configuration: (1) "Heating valve lower limit (%)" indicates the lower limit of the heating valve, options: 0%, 1%... 100% (2) "Fan delay for heating-On position (s)" indicates the delayed heating time after the fan is turned on, options: 0, 1, 2...255 (3) "Heating switch 1" indicates the configuration of the heating switch 1 relay, options: None, output1...output24 (4) "Heating switch 2" indicates the configuration of the heating switch 2 relay, options: None, output1...output24 2. Select "Cooling & Heating": select the heating mode to enable the following function configuration: (1) "Object type with change for cooling/heating" indicates the object type used to select cooling/heating, options: 1bit, 1byte (2) "Heating valve lower limit (%)" indicates the lower limit of the heating valve, options: 0%, 1%... 100% (3) "Fan delay for heating-On position (s)" indicates the delayed heating time after the fan is turned on, options: 0, 1, 2...255

	(4) "Fan delay for cooling-Off position (s)" indicates the delayed cooling time after the fan is turned off, options: 0, 1, 2...255 (5) "function mode of voltage recovery" indicates the function mode of the fan coil unit after voltage recovery, options: "Cooling", "Heating", As before voltage failure;
Fan delay for heating-On position (s)	Options: 0, 1, 2...255
Cooling switch 1	Options: None, output1...output24
Cooling switch 2	Options: None, output1...output24
Whether to use a local controller	Indicates whether to use the local controller, options: Yes, No, select "Yes" to enable the following function configuration: 1. Method of heating control, optional options: Switching On/Off(use 2-point control), Continuous control(use PI control); (1) Select "continuous control(use PI control)" to enable function configuration: Cooling speed, Available options: "Cooling ceiling (5k/150min)" means cooling upper limit (5k/150 minutes), "Split unit (4k/90min)" means cooling and heating split unit speed (4k/90min), "User define" means user-defined ; (1-1) Select "User define" to enable function configuration when user-defined: 1. Proportional range for cooling, options: 0……255; 2. Adjust time for cooling, options: 0…….255 ; 2. Hysteresis *0.1℃ (For cooling), options: 0......200 3. Actual temperature source, options: internal value, External sensor Note: Hysteresis *0.1℃ (For cooling) temperature hysteresis function configuration, Cooling speed function configuration, the function configuration is performed by selecting the fan coil function mode before
Fan auto/manual polarization	Optional 0: Auto,1: Manua; 1: Auto,0: Manual
Fan control behavior	options: Only One fan at same time, hierarchically
Fan output change delay time(x100ms)	options: 1...255(x100ms)
Fan-1 lower limit (%)	Indicates the temperature lower limit of fan No. 1, options: 0……100
Fan-2 lower limit (%)	Indicates the temperature lower limit of fan No. 2, options: 0……100
Fan-3 lower limit (%)	Indicates the temperature lower limit of fan No. 3, options: 0……100
Value for Fan speed Off	Indicates to set the fan speed off value, which can be filled in: 0-255;
Value for Fan speed low	Indicates to set the low-speed value of the fan speed, which can be filled in: 0-255;
Value for Fan speed medium	Indicates that the fan speed is set to be turned off at a medium speed, which can be filled in: 0-255;
Value for Fan speed high	Indicates that the fan speed is set to be turned off at high speed, and can be filled in: 0-255;
Send feedback on change	Indicates sending fan change feedback, options: "Yes", "no"
Send feedback with cycle time	Indicates that change feedback is sent cyclically, options: "Yes", "no"
Bus voltage recovery reaction	Indicates the fan status of the bus voltage recovery after power failure, options: "No reaction", "Switch Off all outputs"
Lock function usage	The use of the channel lock function locks the on/off state of the corresponding channel relay to invalidate its control on the bus. Options: Enabled, Disabled. When "Enabled" is selected, the following function configuration will be enabled: 1. "The polarity of the lock" is the polarity of the lock, options: Lock with "1", Unlock with "0",

Specification	Description
	Lock with "0", Unlock with "1";
	2. "Lock start position" is the starting position of the lock, options: No reaction, Switch Off all outputs;
	3. "Lock end position" is the end position of the lock, options: No reaction, Switch Off all outputs;
Fan 1	Indicates the relay configuration of fan 1, options: None, output1...output24
Fan 2	Indicates the relay configuration of fan 2, options: None, output1...output24
Fan 3	Indicates the relay configuration of fan 3, options: None, output1...output24

6.4.2 Fan coil-4Pipes （valve:4relay, fan:3relay

When "Function" selects "(Fan coil-4Pipes (valve:4relay, fan:3relay))":

Specification	Description
Object type with change for cooling/heating	Indicates the fan coil function mode selection, options: "Only cooling" default option, "Only heating", "Cooling & Heating"
	1. "Only heating": Select the heating mode to enable the following function configuration:
	(1) "Heating valve lower limit (%)" indicates the lower limit of the heating valve, options: 0%, 1%... 100%
	(2) "Fan delay for heating-On position (s)" indicates the delayed heating time after the fan is turned on, options: 0, 1, 2...255
	(3) "Heating switch 1" indicates the configuration of the heating switch 1 relay, options: None, output1...output24
	(4) "Heating switch 2" indicates the configuration of the heating switch 2 relay, options: None, output1...output24
	2. "Cooling & Heating": Select the heating mode to enable the following function configuration:
	(1) "Object type with change for cooling/heating" indicates the object type used to select cooling/heating, options: 1bit, 1byte
	(2) "Heating valve lower limit (%)" indicates the lower limit of the heating valve, options: 0%, 1%... 100%
	(3) "Fan delay for heating-On position (s)" indicates the delayed heating time after the fan is turned on, options: 0, 1, 2...255
	(4) "Fan delay for cooling-Off position (s)" indicates the delayed cooling time after the fan is turned off, options: 0, 1, 2...255
	(5) "function mode of voltage recovery" indicates the function mode of the fan coil unit after voltage recovery, options: "Cooling", "Heating", As before voltage failure;
function mode of voltage recovery	Indicates the function mode of the fan coil after the voltage is restored, options: "Cooling", "Heating", As before voltage failure;
Cooling switch 1	Indicates the configuration of the cooling switch 1 relay, options: None, output1...output24
Cooling switch 2	Indicates the configuration of the cooling switch 2 relay, options: None, output1...output24
Heating switch 1	Indicates the configuration of the heating switch 1 relay, options: None, output1...output24
Heating switch 2	Indicates the configuration of the heating switch 2 relay, options: None, output1...output24
Whether to use a local controller	Indicates whether to use the local controller, options: Yes, No, select "Yes" to enable the following function configuration:
	1. Method of heating control, optional options: Switching On/Off(use 2-point control), Continuous control(use PI control); (1) Select "Continuous control(use PI control)" to enable function

	configuration:<1>Cooling speed, options: "Cooling ceiling (5k/150min)" indicates cooling/heating upper limit (5k/150min), "Split unit(4k/90min)" indicates cooling/heating split unit speed (4k/90min), "User define" means user-defined; <2>Heating speed, options: "Heating ceiling (5k/150min)" indicates the heating upper limit (5k/150min), "Split unit(4k/90min)" indicates the cooling and heating split unit speed (4k/90min), "User define" means user-defined; <2-1>Select "User define" means user-defined, enable function configuration: 1. Proportional range for cooling, optional: 0...255; 2. Adjust time for cooling (custom cooling time), optional :0…….255; 2. Hysteresis *0.1℃ (For cooling), options: 0......200 3. Hysteresis *0.1℃ (For Heating), options: 0......200 4. Actual temperature source, options: internal value, external sensor
Heating valve lower limit (%)	Indicates the lower limit of the heating valve, options: 0%, 1%...... 100%
Fan delay for heating-On position (s)	Indicates the delayed heating time after the fan is turned on, options: 0, 1, 2...255
Fan delay for cooling-Off position（s	Indicates the delayed cooling time after the fan is turned off, options: 0, 1, 2...255
Total travel time for valve from full close to full open(s)	Indicates the total travel time of the valve from fully closed to fully open, options: 0, 1, 2...255
Total travel time for valve from full open to full close(s)	Indicates the total travel time of the valve from fully open to fully closed, options: 0, 1, 2...255
Fan auto/manual polarization	Indicates the automatic/manual mode of the fan, options: 0: Auto,1: Manual; 1: Auto,0: Manual
Fan control behavior	Indicates fan control behavior, options: Only One fan at same time, hierarchically
Fan output change delay time(x100ms)	Indicates the delay output time when the fan changes, options: 1...255(x100ms)
Fan-1 lower limit (%)	Indicates the temperature lower limit of fan No. 1, options: 0……100
Fan-2 lower limit (%)	Indicates the temperature lower limit of fan No. 2, which can be filled in: 0……100
Fan-3 lower limit (%)	Indicates the temperature lower limit of fan No. 3, which can be filled in: 0……100
Value for Fan speed Off	Indicates to set the fan speed off value, which can be filled in: 0-255;
Value for Fan speed low	Indicates to set the low-speed value of the fan speed, which can be filled in: 0-255;
Value for Fan speed medium	Indicates that the fan speed is set to be turned off at a medium speed, which can be filled in: 0-255;
Value for Fan speed high	Indicates that the fan speed is set to be turned off at high speed, and can be filled in: 0-255;
Send feedback on change	Indicates sending fan change feedback, options: "Yes", "no"
Send feedback with cycle time	Indicates that change feedback is sent cyclically, options: "Yes", "no"
Bus voltage recovery reaction	Indicates the fan status of the bus voltage recovery after power failure, options: No reaction, Switch Off all outputs
Lock function usage	The use of the channel lock function locks the on/off state of the corresponding channel relay to invalidate its control on the bus. Options: Enabled, Disabled. When "Enabled" is selected, the following function configuration will be enabled: 1. "The polarity of the lock" is the polarity of the lock, options: Lock with "1", Unlock with "0", Lock with "0", Unlock with "1"; 2. "Lock start position" is the starting position of the lock, options: No reaction (, Switch Off all outputs; 3. "Lock end position" is the end position of the lock, options: No reaction, Switch Off all outputs;

Fan 1	Indicates the relay configuration of fan 1, options: None, output1...output24
Fan 2	Indicates the relay configuration of fan 2, options: None, output1...output24
Fan 3	Indicates the relay configuration of fan 3, options: None, output1...output24

6.5 Dry contact interface

1) Click "Universal Interface" as shown in Figure 6.5.1, and Universal Interface A-D is set to Enabled, and four dry contact interfaces will be

enabled.
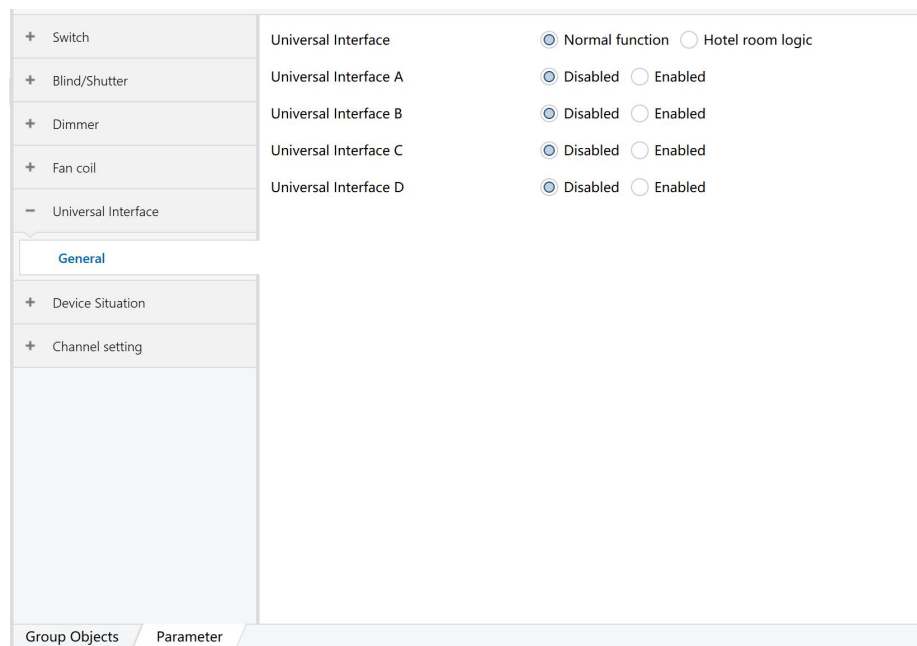
Figure 6.5.1

1)After the setting is completed, four dry contact interfaces, Interface A-D, will appear on the right, click each dry contact interface to set its

parameters. Take Universal Interface A as an example, as shown in Figure 6.5.2.
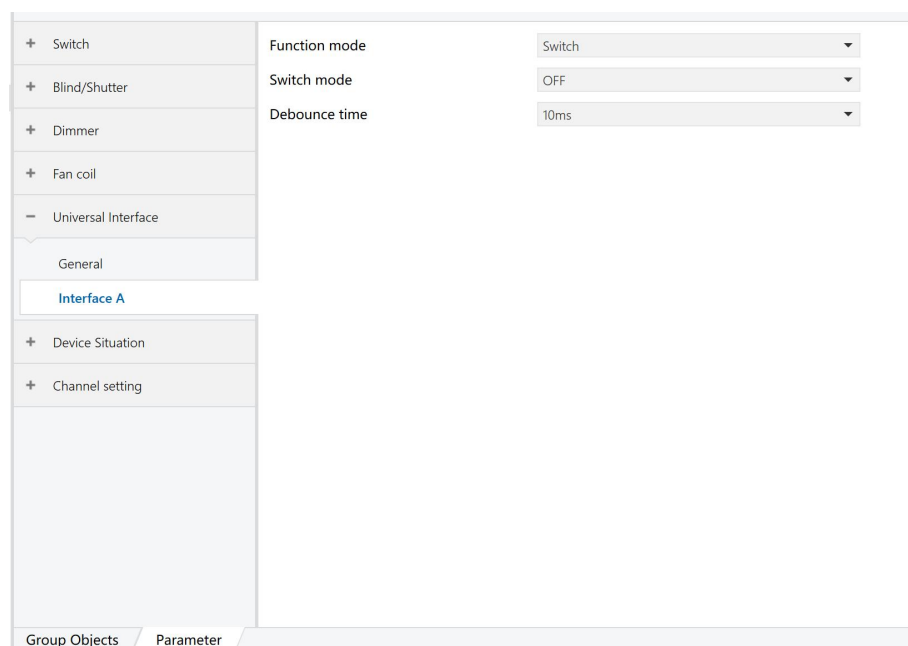
Figure 6.5.2

3） The parameter "function mode" is divided into 6 modes: Switch, Blind, Blind position, Dimming, Dimming position, Scene

6.5.1 Switch model

Specification	Description
Switch mode	Indicates the action of the corresponding loop control when the dry contact is triggered, options: On, Off, toggle, user define; when user define is selected, the following function configuration will be enabled: 1. reaction on closing the contact indicates the reaction when the dry contact is closed, options: On, Off, no reaction; 2. Reaction On opening the contact indicates the reaction when the dry contact is released, options: On, Off, no reaction; 3. Cyclic Transmission of object indicates the object to be sent cyclically, options: no, if "switch" =On, if "switch" =Off, always. When selecting if "switch" =On, if "switch" =Off or always, the function configuration will appear: Transmission cycle time: base and Time factor [1-255] (the two parameters here represent the time interval between cyclic transmissions, This time = Transmission cycle time: base message value × Time factor [1-255] message value).
debounce time	Options: 10ms、20ms……250ms

6.5.2 Blind Model

Specification	Description
Blind mode	Indicates the curtain action controlled by the corresponding loop when the dry contact is triggered, options: up, down, toggle;
Long operation	options: yes, no. When yes is selected, the following feature configurations are enabled: 1. Long operation after, options: 0.5s, 1s, 2s...7s; 2. The interval of data (base: 0.1s) indicates the time interval for sending each piece of data when long pressing, optional options: 1, 2, 3...255;
debounce time	Options: 10ms、20ms……250ms

6.5.3 Blind position model

Specification	Description

Blind value (Range:0-255)0-100%	Indicates the position percentage of the corresponding loop to control the curtain when the dry contact is triggered, options: 0-255;
debounce time	Options: 10ms、20ms……250ms

6.5.4 Dimming model

Specification	Description
Dimming mode	Options：Dimming up，dimming down，toggle；
Long operation after	Indicates that there will be a corresponding action after a few seconds of long press, optional options: 0.5s, 1s, 2s...7s
Transmission mode for long operation	Options: One-time Transmission, cyclic Transmission
Step dimming	Options: 100%、50%、25%、12%、6%、3%、1%
Send stop instruction when releasing	Options: No，Yes
debounce time	Options: 10ms,20ms …100ms

6.5.5 Dimming position model

Specification	Description
Dimming position (Range:0-255)0-100%	Options： 0-255；
debounce time	Options: 10ms,20ms… 100ms

6.5.6 Scene Model

Specification	Description
Scene number	Indicates the scene number called when the dry contact is triggered, options: 1-64;
debounce time	Options: 10ms, 20ms...100ms.

6.6 Equipment condition

1）Click "Device Situation" as shown in Figure 6.6.1, when the parameters Manual status and Device status are set to Enabled, the corresponding function will be enabled。
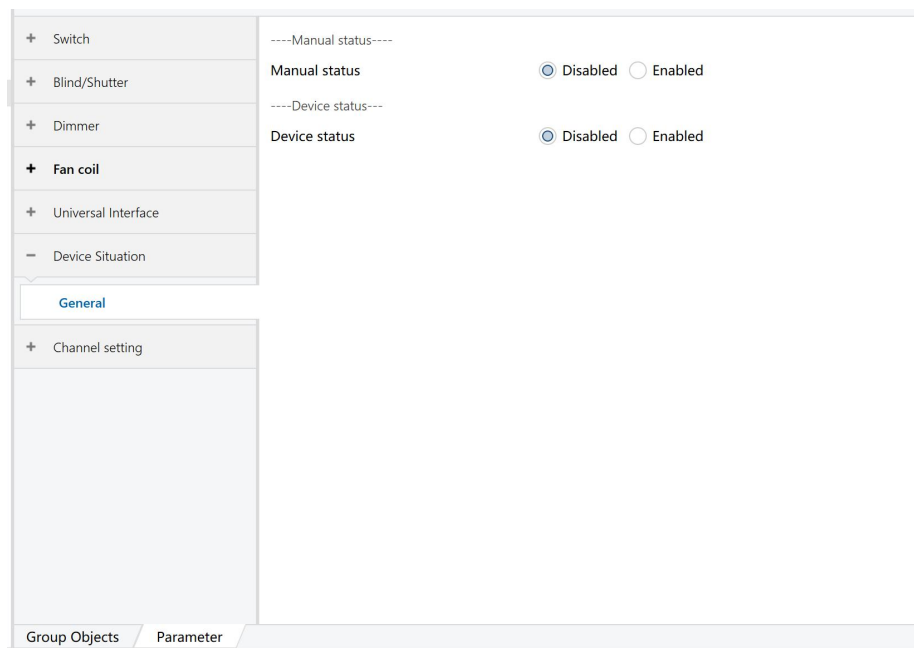
Figure 6.6.1

Specification	Description
Manual status (No Available)	Indicates manual status, options: Disabled, Enabled, when "Enabled" is selected, the following function configurations are enabled: 1. Optional options for Transmission of manual status: using read request Only, On change in status, always in operation; 2. On time during manual mode, options: unlimited, 1minutes, 2minutes...120minutes;
Device status	Indicates the status of the device, options: Disabled, Enabled, when "Enabled" is selected, enable function configuration, Transmission of device status, options: using read request Only, On change in status, always in operation;

6.7 Channel setting

1）Click "Channel setting" as shown in Figure 6.7.1, and the corresponding function configuration of 1-24Channel will appear on the right, taking Channel 1 as an example.
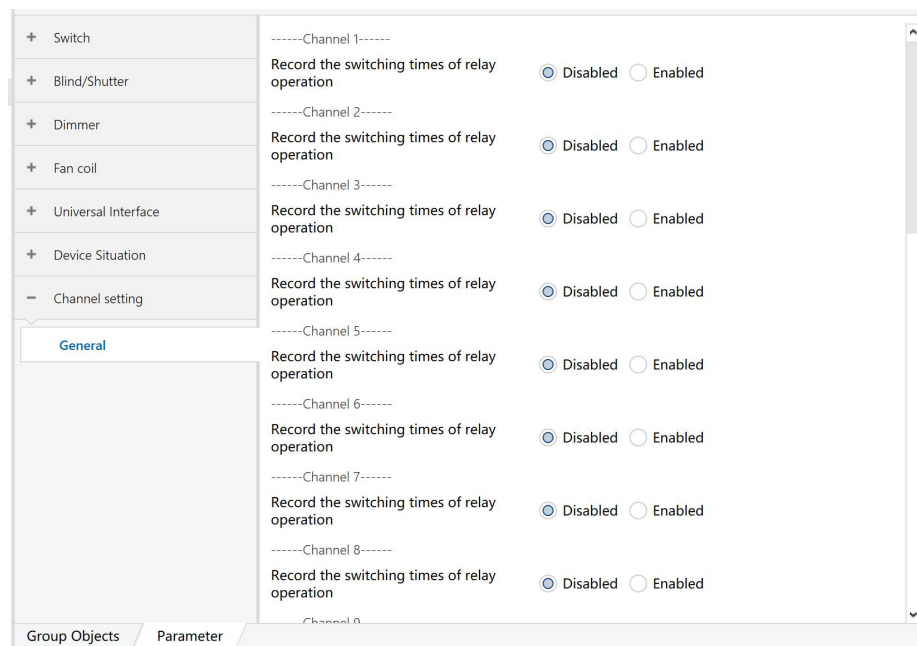
Figure 6.7.1

Specification	Description
Record the switching times of relay operation	Record the number of relay switch operations, options: Enabled, Disabled, when "Enabled" is selected, enable the following functional configuration: 1. "Overwrite the switching times during ETS download" is the function of resetting the number of operations when downloading ETS data. After the download is completed, the number of operations will be reset to zero. Options: No, Yes; 2. "Reset the switching times of relay operation" is the function of resetting the switching times of the relay operation, options: No, Yes; 3. "Send switching times in cycle" is the function of sending switching times in a cycle. Options: Enabled, Disabled. When "Enabled" is selected, enable the function to configure "The time in cycles" as the cycle period. Options: 1 seconds, 2 seconds...120 minutes; 4. "Send switching times on change" is the function of sending the number of switching operations on the bus when the relay changes. The options are: Enabled, Disabled. When "Enabled" is selected, the enabled function configures the changed value of "The value On change", which is How many times the relay switch satisfies the number of operations before sending a switch operation on the bus, options: 0, 1, 2...255;

7 Description of communication object

The communication object is the medium through which the device communicates with other devices on the bus, that is, only the communication object can perform bus communication. The function of the communication object of each functional module is introduced in detail below. This time, there are 556 communication objects in the 24-way multi-function actuator. (Take the first channel of each functional module as an example).

Note: "C" in the attribute column of the form below means that the communication function of the communication object is enabled, "W" means that the value of the communication object can be rewritten through the bus, "R" means that the value of the communication object can be read through the bus, " T" means that the communication object has the transmission function, and "U" means that the value of the communication object can be updated, as shown in Figure 7.1.

	Number	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
	1	Channel 1, Switch, Lock	Lock/Unlock			1 bit	C	R	W	-	U	enable	Low
	2	Channel 1, Switch, Swit...	On/Off			1 bit	C	R	W	-	U	switch	Low
	5	Channel 1, Switch, Sce...	Recall/Program			1 byte	C	R	W	-	U	scene cont...	Low
	6	Channel 1, Switch, Stat...	On/Off			1 bit	C	R	-	T	-	switch	Low
	7	Channel 2, Switch, Lock	Lock/Unlock			1 bit	C	R	W	-	U	enable	Low
	8	Channel 2, Switch, Swi...	On/Off			1 bit	C	R	W	-	U	switch	Low
	11	Channel 2, Switch, Sce...	Recall/Program			1 byte	C	R	W	-	U	scene cont...	Low
	12	Channel 2, Switch, Sta...	On/Off			1 bit	C	R	-	T	-	switch	Low
	145	Blind/Shutter 1, Lock	Lock/Unlock			1 bit	C	R	W	-	U	enable	Low
	146	Blind/Shutter 1, Up D...	Up/Down			1 bit	C	R	W	-	U	up/down	Low
	147	Blind/Shutter 1, Step...	Step/Stop			1 bit	C	R	W	-	U	step	Low
	148	Blind/Shutter 1, Positi...	0%..100%			1 byte	C	R	W	-	U	percentag...	Low
	150	Blind/Shutter 1, Scene	Recall/Program			1 byte	C	R	W	-	U	scene cont...	Low
	151	Blind/Shutter 1, Positi...	0%..100%			1 byte	C	R	-	T	-	percentag...	Low
	241	Dimming 1, Lock	Lock/Unlock			1 bit	C	R	W	-	U	enable	Low
	242	Dimming 1, Switch	On/Off			1 bit	C	R	W	-	U	switch	Low
	243	Dimming 1, Relative Di...	Brighter/Darker			4 bit	C	R	W	-	U	dimming c...	Low
	244	Dimming 1, Dimming...	0%..100%			1 byte	C	R	W	-	U	percentag...	Low
	245	Dimming 1, Status swit...	On/Off			1 bit	C	R	-	T	-	switch	Low
	246	Dimming 1, Status dim...	0%..100%			1 byte	C	R	-	T	-	percentag...	Low
	290	Fan 1, Cooling Comma...	0%..100%			1 byte	C	R	W	-	U	percentag...	Low
	292	Fan 1, Manual Fan Level	1byte			1 byte	C	R	W	-	U	percentag...	Low
	293	Fan 1, Status Manual F...	1byte			1 byte	C	R	-	T	-	percentag...	Low
	294	Fan 1, Fan Auto/Manual	Auto/Manual			1 bit	C	R	W	-	U	enable	Low

Group Objects / Channels / Parameter

Figure 7.1

7.1 Description of switch function object

No.	Name	Communication Object	Data Type	Attribute
1	Channel x, Switch, Lock	Lock/Unlock	1 bit	C,R,W,U
The communication object is enabled when "Channel X" selects "Enabled". When the communication object receives the message value "1", the channel will be "opened" according to the corresponding mode set; the communication object receives the message value "1". When set to 0", the channel will be "closed" according to the corresponding mode set.				
2	Channel x, Switch, Switch	On/Off	1 bit	C,R,W,U
The communication object is enabled when "Channel X" selects "Enabled". When the communication object receives the message value				

"1", the channel will be "opened" according to the corresponding mode set; the communication object receives the message value "1".

When set to 0", the channel will be "closed" according to the corresponding mode set.

3	Channel x, Switch, Time	Enable/Disable	1 bit	C,R,W,U

The communication object is to enable the timing mode when the parameter Operating mode of "Channel X" is selected as "Time mode". When the object receives the telegram value "0", it turns off the timing mode.

4	Channel x, Switch, Cycle	Enable/Disable	1 Byte	C,R,W,U

The communication object is to enable the cycle mode when the parameter Operating mode of "Channel X" selects "Cycle mode". When the communication object receives the message value "1", the cycle mode is turned on. When the communication object receives the message value "0" , to turn off loop mode.

5	Channel x, Switch, Scene	Recall/program	1 byte	C,R,W,U

This communication object is enabled when the parameter "8-bit scene control" of "Channel X" selects "Enabled". Sending a 1byte command through this communication object can call the operation of setting the corresponding scene number.

The parameter setting options are 1~64. In fact, the scene message received by the communication object Scene, Channel X corresponds to 0~63. For example, Scene 1 is set in the parameter, and Scene 0 is received by the communication object Scene, Channel X.

6	Channel x, Switch, Status for switch	On/Off	1 bit	C,R,W,U

This communication object is enabled when the parameter "Status response" of "Channel X" is selected as "Yes". The value of this communication object can directly indicate the switch status of the channel X relay.

7.2 Curtain function object description

No.	Name	Communication Object	Data Type	Attribute
145	Blind/Shutter x, Lock	Lock/Unlock	1 bit	C,R,W,U

This communication object is enabled when the function "Lock function usage" of "Channel X" is selected as "Enabled". The upper control is invalidated.

146	Blind/Shutter x, Up Down	Up Down	1 bit	C,R,W,U

The communication object is enabled when "Channel X" selects "Enable". When the communication object receives the value "0", the curtain moves to the 0% position (the curtain is opened); when the communication object receives the value "1", The shade moves to the 100% position (curtain closed).

147	Blind/Shutter x, Step Stop	Step/Stop	1 bit	C,R,W,U

This communication object is enabled when "Enable" is selected for "Channel X", and this communication object is used for the jog operation of the curtain.

148	Blind/Shutter x, position	0%..100%	1 Byte	C,R,W,U
This communication object is enabled when "Enable" is selected for "Channel X". This object is used for the percentage of curtain closing/starting position, for example: (0% means curtain is open, 100% means curtain is closed).					
149	Blind/Shutter x, Blind Slat, Angle	0%..100%	1 byte	C,R,W,U
This communication object is enabled when "Enable" is selected for "Channel X", and this object is used for the percentage of the angle of the slats of the blinds.					
150	Blind/Shutter x, Scene	Recall/program	1 byte	C,R,W,U
This communication object is enabled when the parameter "8-bit scene control" of "Channel X" selects "Enabled". Sending a 1byte command through this communication object can call the operation of setting the corresponding scene number. The parameter setting options are 1~64. In fact, the scene message received by the communication object Scene, Channel X corresponds to 0~63. For example, Scene 1 is set in the parameter, and Scene 0 is received by the communication object Scene, Channel X.					
151	Blind/Shutter x, position Feedback	0%..100%	1 byte	C,R,T
This communication object is enabled when "Enable" is selected for "Channel X". This object is used to feedback the percentage of the curtain closing/starting position, for example: (0% means the curtain is open, 100% means the curtain is closed).					
152	Blind/Shutter x, Blind Slat, Angle Feedback	0%..100%	1 byte	C,R,T
This communication object is enabled when "Enable" is selected for "Channel X", and this object is used to feedback the percentage of the angle of the slats of the blinds.					

7. 3 Fan coil functional object description

No.	Name	Communication Object	Data Type	Attribute
289	Fan x, Fan coil, Lock	Lock/Unlock	1 bit	C,R,W,U
This communication object is enabled when the function "Lock function usage" of "Channel X" is selected as "Enabled". The upper control is invalidated.					
290	Fan x, Cooling Command Value	0%..100%	1 byte	C,R,W,U
This communication object is enabled when the "Fan coil function" of "Channel X" selects "Only cooling". This object is used to receive the percentage index value of fan coil cooling. Note: Selecting "Yes" in the feature configuration "Whether to use a local controller" does not enable this object.					
291	Fan x, Heating Command Value	0%..100%	1 byte	C,R,W,U
This communication object is enabled when "Fan coil function" of "Channel X" selects "Only heating", and this object is used to					

receive the percentage index value of fan coil heat. Note: Selecting "Yes" in the feature configuration "Whether to use a local controller" does not enable this object.

292	Fan x, Manual Fan Level	1 byte	1 Byte	C,R,W,U

This communication object is enabled when "Enable" is selected for "Channel X", and this object is used to receive and control the operation mode of the fan coil unit.

293	Fan x, Status Manual Fan Level	1 byte	1 byte	C,R,T

This communication object is enabled when "Enable" is selected for "Channel X", and this object is used to receive status feedback for controlling the operation mode of the fan coil unit.

294	Fan x, Fan Auto/Manual	Auto/Manual	1 bit	C,R,W,U

This communication object is enabled when "Enable" is selected for "Channel X", and this object is used to receive and control the automatic/manual operation mode of the fan coil unit.

295	Fan x, HVAC control mode	Cooling/Heating	1 byte	C,R,W,U

This communication object is enabled when the "Object type with change for cooling/heating" function configuration selects "1bit/1byte" when "Cooling/Heating" is selected in the "Fan coil function" function configuration of "Channel X". It is used to receive the control mode of fan coil unit HVAC.

296	Fan x, Status HVAC control mode	Cooling/Heating	1 byte	C,R,T

This communication object is enabled when the "Object type with change for cooling/heating" function configuration selects "1bit/1byte" when the "Fan coil function" of "Channel X" selects "Cooling/Heating". It is used to receive the status feedback of the control mode of the fan coil unit HVAC.

297	Fan x, Setting temperature	2byte	2 byte	C,R,W,U

This communication object is enabled when "Yes" is selected in "Whether to use a local controller" of "Channel X" function configuration, and this object is used to receive the temperature set by the fan coil.

298	Fan x, Status Setting temperature	2byte	2 byte	C,R,T

This communication object is enabled when "Yes" is selected in "Whether to use a local controller" of "Channel X" function configuration, and this object is used to receive the status feedback of the temperature set by the fan coil unit.

299	Fan x, function switch	On/Off	1bit	C,R,W,U

This communication object is enabled when "Yes" is selected in "Whether to use a local controller" in the function configuration of "Channel X". This object is used to receive whether the secondary function is enabled.

300	Fan x, Status function switch	On/Off	1bit	C,R,T

This communication object is enabled when "Yes" is selected in "Whether to use a local controller" of "Channel X" function

configuration, and this object is used to receive the status feedback of whether this function is enabled.

301	Fan x, Actual temperature	2 byte	2 byte	C,R,W,U

This communication object is enabled when "External sensor" is selected in the function configuration "Actual temperature source" in

"Channel X" enabling local control. This object is used to receive the source of the actual temperature of the fan coil unit.

7. 3 Dry contact interface functional object description

445	Switch, Interface X	On/Off	1 bit	C,R,W,T

This communication object is enabled when "Switch" is selected in "function mode" in "Interface X". When the dry contact is

triggered, the channel will send the corresponding open or close command according to the corresponding mode set.

446	Blind, Interface X	Up/Down	1 bit	C,R,W,T

This communication object is enabled when "Blind" is selected for "function mode" in "Interface X". When the dry contact is triggered

by a short press, the channel will send the corresponding up or down command according to the corresponding mode set.

447	Blind, long, Interface X	Up/Down	1 bit	C,R,W,T

The communication object is enabled when "long operation" is selected as "yes" in the "Blind" mode of "Interface X". When the dry

contact is triggered by a long press, the channel will send the corresponding up or down command according to the corresponding mode

set

448	Blind value, Interface X	8-bit value	1 Byte	C,R,W,T

This communication object is enabled when "Blind position" is selected for "function mode" in "Interface X". When the dry contact is

triggered, the channel sends the corresponding curtain height percentage command according to the corresponding mode set.

449	Dimming switch, Interface X	On/Off	1 bit	C,R,W,T

This communication object is enabled when "Dimming" is selected in "function mode" in "Interface X". When the dry contact is

triggered by a short press, the channel will send the corresponding dimming on/off command according to the corresponding mode set.

450	Dimming level, Interface X	Brighter/Darker	4 bit	C,R,W,T

This communication object is enabled when "Dimming" is selected for "function mode" in "Interface X". When the dry contact is

triggered by a long press, the channel will send the relative dimming command of the corresponding level according to the

corresponding mode set.

451	Dimming value, Interface X	8-bit value	1 Byte	C,R,W,T

This communication object is enabled when "Dimming position" is selected in "function mode" in "Interface X". When the dry contact

is triggered, the channel sends an absolute dimming command according to the set percentage.

452	Scene, Interface X	8-bit value	1 Byte	C,R,W,T

This communication object is enabled when "Scene" is selected in "function mode" in "Interface X". When the dry contact is triggered, the channel will send the corresponding scene control command according to the corresponding mode set.

7. 4 Device Status Functional Object Description

481	Device status	On/Off	1 bit	C,R,W,T

This communication object is enabled when "Device status" in "Device Situation" selects "Enabled". This object is used to read the device status of the switch actuator. In the "on" state, the device is normal; when the communication object sends a message value "00", the device is in the "off" state, and the device is abnormal.

480	Manual status	On/Off	1 bit	C,R,T

This communication object is enabled when "Enabled" is selected for "Manual status" in "Device Situation". This object is used to read the manual status of the switch actuator.

7. 5 Channel setting function object description

482	Reset the switching times, Channel X	Reset	1 bit	C,R,W,T,U

This communication object is enabled when "Record the switching times of relay operation" in "Channel X" selects "Enabled" and the function configuration "Reset the switching times of relay operation" selects "Yes". This parameter is used to reset the number of switching operations of the relay, the communication object receives a message value of "00", which means no action, and receives a message value of "01", which means that the number of reset relay switches is zero.

483	Record the switching times, Channel X	Statistics	4 Byte	C,R,W,T

This communication object is enabled when "Record the switching times of relay operation" in "Channel X" selects "Enabled" and selects "Yes". This parameter sends the times of relay switching operations on the bus.

8 Safe use and maintenance

(1) Read all instructions carefully before use.

(2) To establish a good ventilation environment.

(3) During use, pay attention to moisture-proof, shock-proof and dust-proof.

(4) It is strictly forbidden to rain, contact with other liquids or corrosive gases.

(5) If it is damp or attacked by liquid, it should be dried in time.

(6) When the machine breaks down, please contact professional maintenance personnel or our company.

9 Contact

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