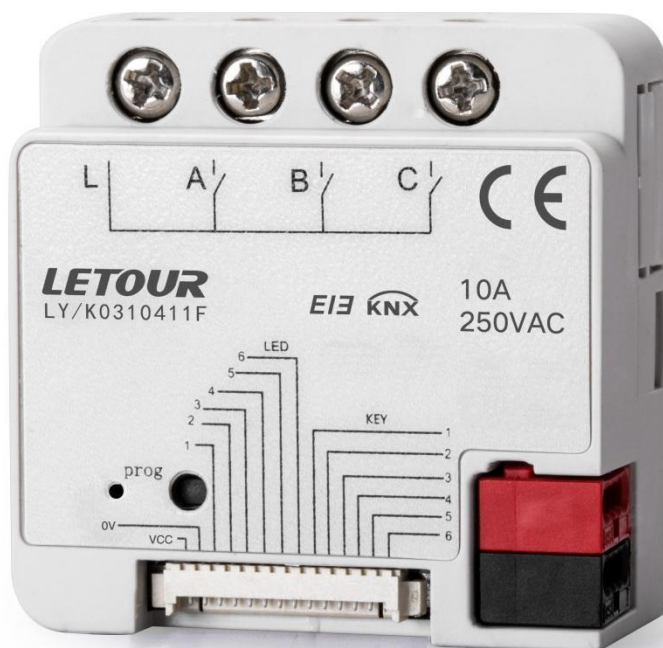


LETOUR Switch Actuator

(Flush mounted Switch with IO)

UM-V1.2



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1. General

Embedded switch module is a simple, low-cost smart home system products, it is mainly for the post-installation market, that is, mainly for the existing has been wired building or old house intelligent transformation, which is installed in an ordinary 86 box, compared with the traditional lighting wiring and control methods, only need to add an additional KNX bus, you can transform the original traditional lighting program into a modern smart home! The installation is simple and convenient. The system is designed to cover the following application areas in response to the functional requirements of existing home applications:

- **Switch output**
- **Dry contact input**
- **LED output indication**

The products of this system are only powered and communicated via the KNX system bus, no additional supply voltage is required and the outputs are connected to the loads by means of screw terminals.

The system consists of the following function blocks. During the use of the product, we will select the relevant function blocks for functional configuration according to the characteristics of the product. The configuration tool is the engineering design tool software ETS with pr4 project files (version ETS3 or above). The functions of the modules are summarized below:

——**Dry contact Input detection**

can be connected with dry contact panels or sensor devices, and supports up to 6 inputs. The functions are summarized as follows:

- **Switching and dimming**
- **Blind control**
- **Recall and Stored scene function**
- **Value sending**

— Switch output

which can connect some electrical loads, such as lighting, sockets and heating control. There are 3 outputs, load: 250VAC10A。 Functions:

- **Switch**
- **Provide 8 scenes, recall and storing via a 1byte object**
- **Status response, for know the current output state in the visualization**
- **Set the relay contact position after bus voltage recovery**
- **Set the relay contact position after bus voltage failure**

— LED Output indicator

can support common-cathode or common-anode LED indicator connection, and the voltage can be 12V. Up to 6 outputs. Real-time display of the status of the light circuits to be displayed on the panel (the connected switch panel must have the function of LED indication of the connection).

In order to ensure that the system works properly, it is important to check the wiring for problems before use and to pay attention to the technical characteristics of the load equipment. The functional configuration of the product needs to be carried out in conjunction with the characteristics of the selected product.

This manual provides the user with detailed technical information about the product, including installation and programming details, and explains how to use it in relation to examples of actual use.

2. Technical Data、Dimension and Connection Diagram

2.1 Technical Data

Power supply	Operation voltage, EIB	21~30V DC,through EIB
	Current consumption, EIB	<24mA(with 2 slave)
	Power consumption, EIB	<360mW
Relay output	Channel	Up to 3-fold (Maximum 2 slaves connected to a single master)
	Un Rated Voltage	250/440VAC (50/60Hz)
	In Rated Current/capacity	10A/70uF
	Max. Switching Current	16A/250VAC
	Mechanical life	>1x10 ⁶
	Electrical life	>2.5x10 ⁵
	Max. Switching DC	(Resistive load) 16A/24VDC
Output LED	channel	6-Way, Common Negative Connection
	Current output	1mA
Input channel	Input channel	6-fold dry contract
Connection	EIB/KNX	Via bus connection terminals (Red/Black)
	Output terminal	0.8mmØ
	Wire Range	0.5-4mm ²
	Torque	0.8N-m
Operation and display	Programming button	In the front of the module
	Red LED	Indicate enter the programming mode
	Green LED flashing	Indicate the application layer running normally
Protection	Protection	IP 20, EN 60 529

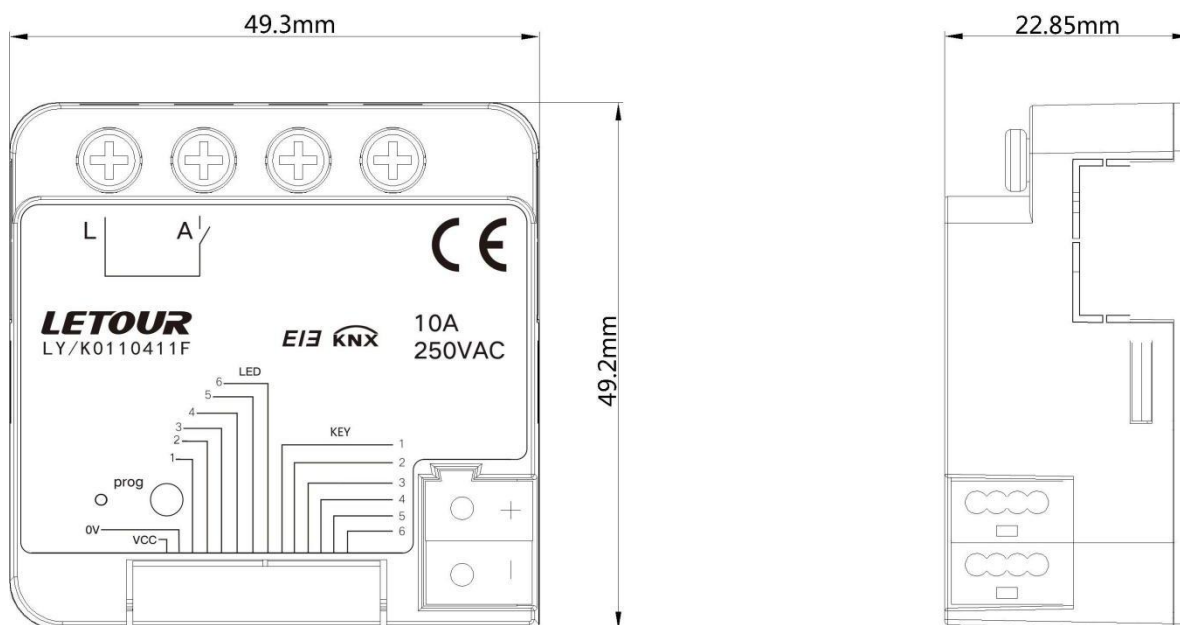
Temperature	Operation	-5℃+45℃
	Storage	-25℃+55℃
	Transport	-25℃+70℃
Environment	Rel.humidity	<93%, except dewing
Design	Design	Flush-mounted
Installation	Installation	Installation in a standard 86 or 60 square box. The depth of the terminal box is at least 50mm.70mm is recommended.
Dimension/ Weight	Dimension	49.3mm×49.2mm×22.85mm
	Weight	About 0.1KG

Application program:

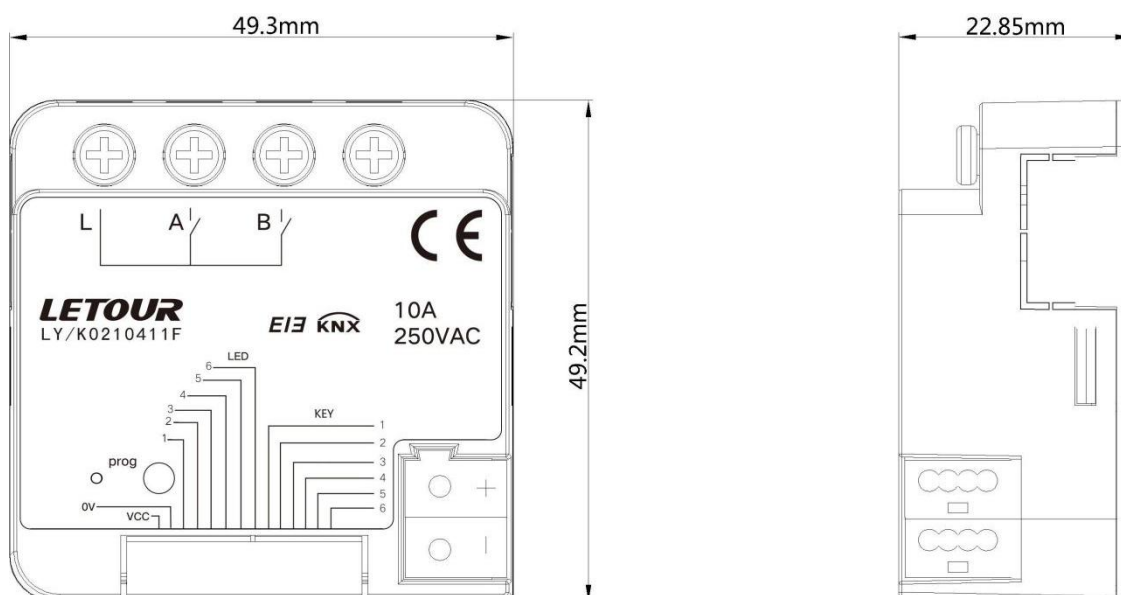
Application program	Max. number of communication objects	Max. number of group addresses	Max. number of group addresses
Flush mounted Switch and IO,3fold,10A	92	250	250

2.2 Dimension

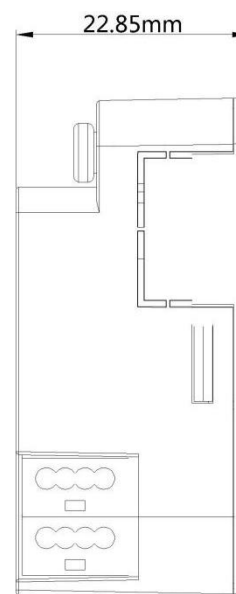
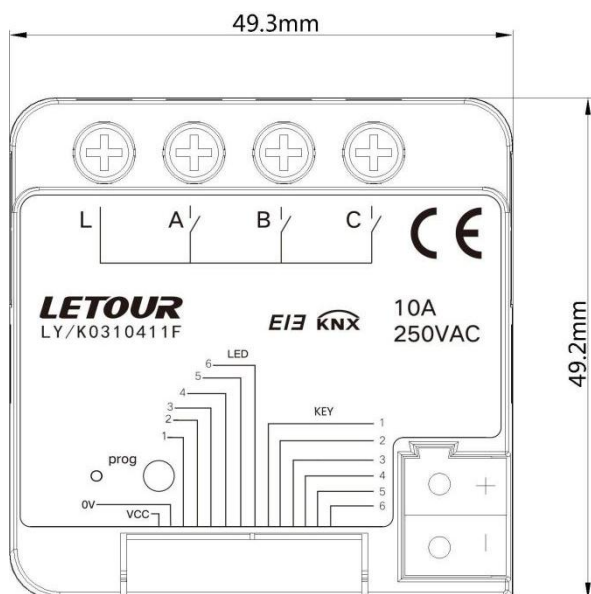
Embedded 1 fold 10A Switch Actuator



Embedded 2 fold 10A Switch Actuator

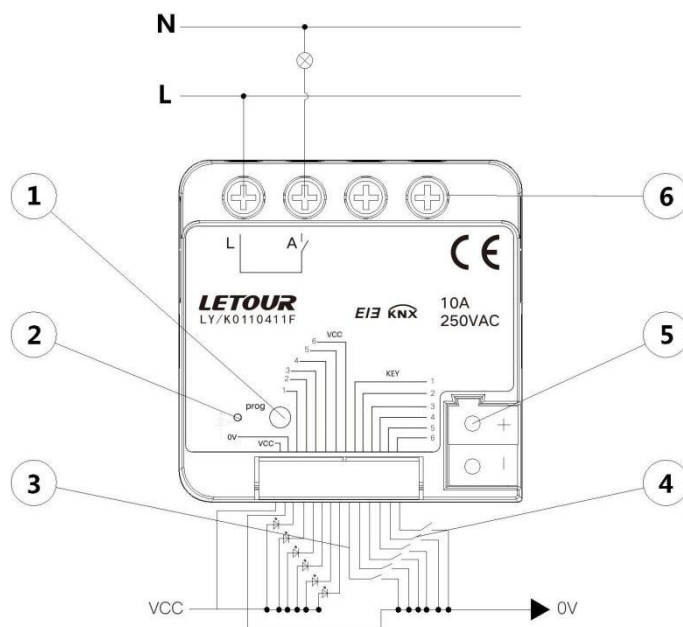


Embedded 3 fold 10A Switch Actuator

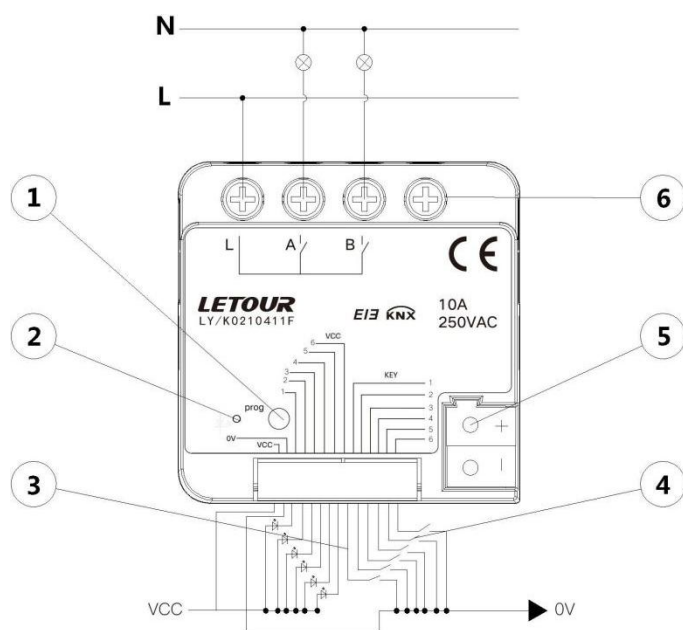


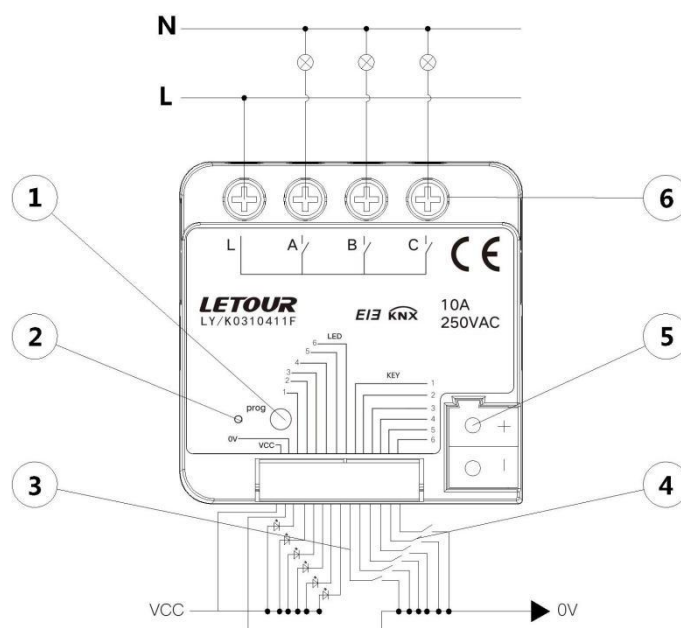
2.3 Connection Diagram

Embedded 1 fold 10A Switch Actuator



Embedded 2 fold 10A Switch Actuator





- ① Programming Button
- ② Programming LED
- ③、④ LED and button wiring position
- ⑤ KNX/EIB bus terminal
- ⑥ LED and key terminal blocks

Notes: VCC indicates positive power (red), 0V indicates negative power (black).

LED indicates an external indicator. KEY indicates a dry contact switch.

3. Parameter setting description in the ETS

The description of the parameter in the ETS system is described in function blocks.

3.1. Parameter window “Input X”

This section describes the input functions in detail. There are 6 inputs in total, and each of them has the same function. The following is an example of one of the inputs to explain the parameter setting:

1.1.2 Flush mounted Switch and IO,10A > Input A

Input A	Function of the channel	Switch ▼
Input B	Connect type	☒ Normally open ☐ Normally close
Input C	Distinction between long and short operation	☒ No ☐ Yes
Input D	Send object value after voltage recovery (if yes,no TOGGLE)	☒ No ☐ Yes
Input E	Reaction on short operation or closing the contact	ON ▼
Input F	Reaction on long operation or opening the contact	OFF ▼
LED	Debounce time	50ms ▼
Switch output config	Disable function	☐ disable ☒ enable
Output A-1	Trigger value of disable object	☒ disable=1/enable=0 ☐ disable=0/enable=1
A-1: Scene		
Output B-1		
B-1: Scene		

Fig.3.1 Parameter window “Input X-Switch”

“Function of the channel”

This parameter sets the function of the input. If the option is “No function”, it means that the function of this input is not enabled. Options:

- **No function**
- **Switch**
- **Switch/Dimming**
- **Value/Force output**
- **Scene control**
- **Shutter control**

3.1.1. “Switch” Function

The parameter window of “Switch” is shown in Figure 4.1.

“Connect type”

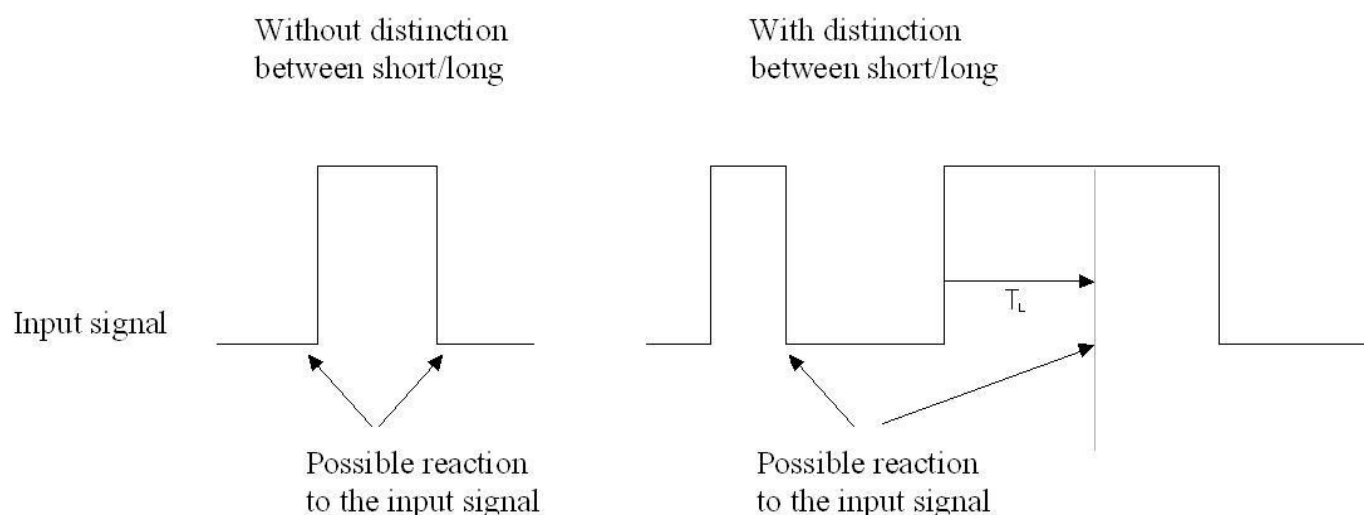
Here you set the contact connection type, in general, whether the input contact is a normally open type or a normally closed type. Options:

- **Normally open**
- **Normally close**

The parameters presented in this section are all in terms of Normally open types; Normally closed types operate in the opposite way to Normally open types.

“Distinction between long and short operation”

This parameter sets whether the contact input distinguishes between long and short operations. If the “yes” option is selected, the input reaches a certain time to determine whether the operation is a long or short operation, and then the contact will execute the set action. The processing of long operation is shown in the figure:



Note: The processing of long operations in the following sections is the same as here. t_l is the time for a long operation, i.e., the time required to determine that an input operation is a long operation.

Options: Yes/No

“Send object value after voltage recovery (if yes , no TOGGLE)”

Here it is set whether the current switching value is sent to the bus when power is restored to the bus, this parameter is visible when there is no distinction between long/short operation.

Options: Yes/No

If the option is “yes”, the current switching value is sent to the bus after bus reset, but only if the parameter “Reaction on short operation or closing the contact”/“Reaction on long are not ‘Toggle’, the switching value will be sent to the bus, if any of the parameter options is “Toggle”. If any of the parameter options is “Toggle”, no value is sent to the bus. If the current operation is “No reaction”, no value will be sent.

“Long operation after(*0.1S)”

This parameter is visible when distinguishing between long/short operations. The valid time for long operations is set here. If the input contact is connected for longer than the time set here, the operation is determined to be a long operation, otherwise it is a short operation.

options : 3..25

“ Reaction on short operation or closing the contact”/“ Reaction on long operation or opening the contact”

The operation to be performed when the contact is closed/disconnected or during a long/short operation is set here. When the input is determined, the object value is updated immediately.

Options:

- **No action**
- **ON**
- **OFF**
- **Toggle**

“No action” - No messages

“ON” - Sending open messages;

“OFF” - Sending close messages;

“Toggle”, Each operation will transition between switch ON and OFF, e.g. if the last time a switch ON message was sent (or received) then this operation will trigger the sending of a switch OFF message, when the switch is operated again a switch ON message will be sent, etc. Therefore, the switch will always memorize its last state, and will be converted to another value when operated.

“Debounce time”

The de-jitter time is set here to prevent unnecessary multiple operations caused when the contact is triggered multiple times during the jitter time, i.e., the minimum effective time for contact input.

Options: 10ms/20ms/...../150ms

“Disable function”

Sets whether to enable the disable function of the input.Options:

- **Disable**
- **Enable**

“Enable”, Inputs can be disabled or used by objects.

“Trigger value of disable object”

Setting the trigger value for disable/enable inputs.Options:

- **Disable=1/enable=0**
- **Enable=0/enable=1**

3.1.2. “Switch / Dimming”Function

1.1.2 Flush mounted Switch and IO,10A > Input A

Input A	Function of the channel	Switch/Dimming
Input B	Connect type	☒ Normally open ☐ Normally close
Input C	Long operation after(*0.1s)	3
Input D	Reaction on short operation	TOGGLE
Input E	Reaction on long operation	brighter/darker
Input F	Dimming mode	☐ Start-stop-Dimming ☒ Steps dimming
LED	Brightness change on every sent	100%
Switch output config	Interval of Tele.cyclic send(*0.1s,0=send once)	3
Output A-1	Debounce time	50ms
A-1: Scene	Disable function	☐ disable ☒ enable
Output B-1	Trigger value of disable object	☒ disable=1/enable=0 ☐ disable=0/enable=1
B-1: Scene		
Output C-1		
C-1: Scene		

“Switch / Dimming”The parameter setting window is shown in Figure 3.2.

Fig.3.2 Parameter window“InputX-Switch/Dimming”

“Connect type”

Here you set the contact connection type, in general, whether the input contact is a normally open type or a normally closed type.

Options:

- **Normally open**
- **Normally close**

The parameters presented in this section are all in terms of Normally open types; Normally closed types operate in the opposite way to Normally open types.

“Long operation after (*0.1s)”

The valid time for a long operation is set here. If the input contact connection time exceeds the time set here, the operation is determined to be a long operation, otherwise a short operation.

Options: 3..25

“Reaction on short operation”

This parameter sets the value of the switch that is sent when a short operation is entered. Options:

- **No action**
- **ON**
- **OFF**
- **Toggle**

“No action”, no any messages.

“ON”, sending open message;

“OFF”, sending close message;

“Toggle”, each operation will transition between switching on and off.

“Reaction on long operation”

This parameter sets the value of the relative dimming that is sent when the input is operated long, dims the light or dims the light, and stops the dimming when the button is released.

Options:

➤ **Brighter**

➤ **Darker**

➤ **Toggle**

“Brighter”, Sends a dimming message when the button is operated long.

“Darker”, Send dimmed message;

“Toggle”, Each operation will toggle between lightening and darkening.

Note: In the parameter setting of switch and relative dimming, if one of the options is “Toggle”, there will be a linkage between them, for example, if the switch object receives a switch on state, then the next time the dimming will be dimmed. For example, if the object receives an off state, then the next dimming will be dimmed.

“Dimming mode”

Here you set the relative dimming method, whether it is the start-stop dimming method or the step-by-step dimming method. Options:

➤ **Start-stop dimming**

➤ **Steps-dimming**

If you select the “Start-stop dimming” option, the relative dimming method is start-stop dimming, a dimming or brightening message is sent when dimming, and a stop message is sent when dimming is finished. In the start-stop dimming mode, the dimming message does not need to be sent cyclically.

If you select the “Steps-dimming” option, the relative dimming mode is step-by-step dimming mode, the dimming message will be sent in a cycle, and the stop dimming message will be sent immediately when the dimming is finished.

“Brightness change one very sent”

This parameter is visible when the “Dimming mode” option is “Steps dimming”. Here you can set the brightness (in percentage) that can be changed by sending a dimming telegram cyclically.

Options:

- **100%**
- **50%**
- **.....**
- **1.56%**

“Interval of Tele. Cyclic send (*0.1s , 0 = send once)”

When the parameter “Dimming mode” is “Steps dimming”, this parameter is visible to set the time interval of sending dimming message cyclically.

options: 0..25

“Debounce time”

The de-jitter time is set here to prevent unnecessary multiple operations caused when the contact is triggered multiple times during the jitter time, i.e., the minimum effective time for contact input.

Options: 10ms/20ms/...../150ms

“Disable function”

Sets whether to enable the disable function of the input.

Options: Disable/Enable

If “Enable”, the input can be disabled or used by the object.

“Trigger value of disable object”

Sets the trigger value for the
disable/enable input.options:

➤ Disable=1/enable=0

➤ Enable=0/enable=1

3.1.3. “Value / Force output” Function

“Value / Force output”the parameter window is shown in Figure 3.3.

1.1.2 Flush mounted Switch and IO,10A > Input A

Input A	Function of the channel	Value/Forced output
Input B	Connect type	☒ Normally open ☐ Normally close
Input C	Distinction between long and short operation	☒ No ☐ Yes
Input D	Reaction on short operation or closing the contact	No reaction
Input E	Reaction on long operation or opening the contact	No reaction
Input F	Debounce time	50ms
LED	Disable function	☐ disable ☒ enable
Switch output config	Trigger value of disable object	☒ disable=1/enable=0 ☐ disable=0/enable=1
Output A-1		
A-1: Scene		

Fig3.3 Parameter window“Input X-Value/Forced output”

“Connect type”

Here you set the type of contact connection, in general, whether the input contact is of the normally open or normally closed type.

Options:

➤ Normally open

➤ **Normally close**

The parameters presented in this section are all in terms of Normally open types; Normally closed types operate in the opposite way to Normally open types.

“Distinction between long and short operation”

This parameter sets whether the contact input distinguishes between long and short operations. If the “yes” option is selected, the input reaches a certain time before it can be determined whether the operation is a long or a short operation, and the contact performs the set action.

Options: yes/No

“Long operation after (*0.1s) ”

This parameter is visible when distinguishing between long/short operations. The valid time for long operations is set here. If the input contact is connected for longer than the time set here, the operation is determined to be a long operation, otherwise it is a short operation.

Options: 3..25

“Reaction on short operation or closing the contact”/“Reaction on long operation or opening the contact”

The type of data to be sent when the contact is closed/disconnected or during long/short operation is set here.

Options:

- **No reaction**
- **1bit value[0/1]**
- **.....**
- **2byte value[0...65535]**

“Output value[...]”

Here you set the value of the data that is sent when the operation is performed. The range of values depends on the data type selected in the previous parameter.

“Debounce time”

The de-jitter time is set here to prevent unnecessary multiple operations caused when the contact is triggered multiple times during the jitter time, i.e., the minimum effective time for contact input.

Options: 10ms/20ms/...../150ms

“Disable function”

Sets whether or not to enable the disable function of the input.

Options: Disable/Enable

If “Enable”, the input can be disabled or used by the object.

“Trigger value of disable object”

Sets the trigger value for the disable/enable input.

Options:

- **Disable=1/enable=0**
- **Enable=0/enable=1**

3.1.4. “Scene control”Function

“Scene control”The parameter window is shown in Figure 3.4.

1.1.2 Flush mounted Switch and IO,10A > Input A

Input A	Function of the channel	Scene control
Input B	Connect type	☒ Normally open ☐ Normally close
Input C	Distinction between long and short operation	☒ No ☐ Yes
Input D	Reaction on short operation or closing the contact	No reaction
Input E	Reaction on long operation or opening the contact	No reaction
Input F	Debounce time	50ms
LED	Disable function	☐ disable ☒ enable
Switch output config	Trigger value of disable object	☒ disable=1/enable=0 ☐ disable=0/enable=1
Output A-1		
A-1: Scene		
Output B-1		

Fig.3.4 parameter window“Input X-Scene control”

“Connect type”

Here you set the contact connection type, in general, whether the input contact is a normally open type or a normally closed type.

Options:

- **Normally open**
- **Normally close**

The parameters presented in this section are all in terms of Normally open types; Normally closed types operate in the opposite way to Normally open types.

“Distinction between long and short operation”

This parameter sets whether the contact input distinguishes between long and short operations. If the “yes” option is selected, the input reaches a certain time before it can be determined whether the operation is a long or a short operation, and the contact performs the set action.

Options: yes/No

“Long operation after (*0.1s)”

This parameter is visible when distinguishing between long/short operations. The valid time for long operations is set here. If the input contact is connected for longer than the time set here, the operation is determined to be a long operation, otherwise it is a short operation.

Options: 3..25

“Reaction on short operation or closing the contact”/“Reaction on long operation or opening the contact”

Scenes are set here to be recalled or stored when the contact is closed/disconnected or during long/short operation.

Options:

- **No reaction**
- **Recall scene**
- **Store scene**

“Scene number (1..64)”

Here to set scene no.: Scene NO.1~64, the according telegram is 0~63.

“Debounce time”

Set the scene number here, the scene number range: Scene NO.1~64, the corresponding message is 0~63.

Options: 10ms/20ms/...../150ms

“Disable function”

Sets whether to enable the disable function of the input.

Options: Disable/Enable

If “Enable”, the input can be disabled or used by the object.

“Trigger value of disable object”

Sets the trigger value for the disable/enable input.

options:

- **Disable=1/enable=0**
- **Enable=0/enable=1**

3.1.5. “Shutter control” Function

“Shutter control”The parameter window is shown in Figure 3.5.

1.1.2 Flush mounted Switch and IO,10A > Input A		
Input A	Function of the channel	Shutter Control
Input B	Connect type	☒ Normally open ☐ Normally close
Input C	Long operation after(*0.1s)	3
Input D	Reaction on short operation	Up/Down
Input E	Reaction on long operation	Stop(Adjust Up/Down)
Input F	Interval of Tele.cyclic send(*0.1s,0=send once)	3
LED	Debounce time	50ms
Switch output config	Disable function	☐ disable ☒ enable
Output A-1	Trigger value of disable object	☒ disable=1/enable=0
A-1: Scene		☐ disable=0/enable=1
Output B-1		

Fig3.5 parameter window “Input X-Shutter control”

“Connect type”

Here you set the contact connection type, in general, whether the input contact is a normally open type or a normally closed type.

Options:

- Normally open
- Normally close

The parameters presented in this section are all in terms of Normally open types; Normally closed types operate in the opposite way to Normally open types.

“Long operation after (*0.1s)”

The valid time for a long operation is set here. If the input contact connection time exceeds the time set here, the operation is determined to be a long operation, otherwise a short operation.

Options: 3..25

“Reaction on short/long operation”

This parameter sets the action to be performed when the input is a short or long operation

options:

- **No action**
- **Up**
- **Down**
- **Up/Down**
- **Stop(Adjust Up)**
- **Stop(Adjust Down)**
- **Stop(Adjust Up/Down)**

“No action”, no any actions.

“Up”, move curtains up or open them;

“Down”, move curtains down or close them;

“Up/Down”, performs curtain opening and closing (move up/down) actions alternately.

“Stop(Adjust Up)”, stopping the operation of the curtains or adjusting the angle of the blinds upwards;

“Stop(Adjust Down)”, stopping the operation of the curtains or adjusting the angle of the blinds upwards;

“Stop(Adjust Up/Down)”, stops curtain operation or alternately performs upward/downward louver angle adjustments.

“Interval of Tele. Cyclic send (*0.1s , 0 = send once) ”

This parameter is visible when the previous parameter option is “Stop...”. This parameter is visible when the previous parameter option is “Stop...”, and it sets the time interval for cyclic sending of louver angle adjustment messages.

Options: 0..25

“Debounce time”

The de-jitter time is set here to prevent unnecessary multiple operations caused when the contact is triggered multiple times during the jitter time, i.e., the minimum effective time for contact input.

Options: 10ms/20ms/...../150ms

“Disable function”

Sets whether to enable the disable function of the input.

Options: Disable/Enable

If “Enable”, Inputs can be disabled or used by objects.

“Trigger value of disable object”

Sets the trigger value for the disable/enable input.

Options :

- **Disable=1/enable=0**
- **Enable=0/enable=1**

3.2. Parameter setting window “LED”

This interface is used to set the function of the LED. 6 LEDs are provided for indication, each LED can be set individually, we will take one of the LEDs as an example for parameter setting.

Input A

Input B

Input C

Input D

Input E

Input F

LED

Switch output config

LED common polarity

LED 1 function

The object value='0',LED is

The object value='1',LED is

LED 2 function

The object value='0',LED is

The object value='1',LED is

LED 3 function

The object value='0',LED is

The object value='1',LED is

common-Cathode

OFF

ON

OFF

ON

OFF

ON

OFF

ON

OFF

ON

OFF

ON

OFF

ON

OFF

ON

Fig.3.6 parameter window “LED”

“LED common polarity”

This parameter comments on the polarity of the LED: common cathode.

“LED X function”

“The object value='0/1', LED is”

Sets whether the LED will light up or go out when the object receives a telegram with a value of “1” or “0”.

Options: OFF/ON

3.3. Parameter window “Switch output con fig”

“Switch output con fig”parameter window is shown in Figure 4.7.

The switching outputs have a total of 9 output channels and are composed of three modules, one is the Main module and the other two are the Slave modules (Sub1/2module).

The parameters of slave module 2 can only be set after slave module 1 is enabled. However, the parameters and communication objects assigned to each output are the same, and the following is an example of one of the outputs.

Flush mounted Switch and IO,10A > Switch output config

Input A	Main module output	☐ disable ☒ enable
Input B	Output A-1	☐ disable ☒ enable
Input C	Output B-1	☒ disable ☐ enable
Input D	Output C-1	☒ disable ☐ enable
Input E		
Input F	Sub1 module output	☐ disable ☒ enable
LED	Output A-2	☒ disable ☐ enable
Switch output config		
Output A-1	Output B-2	☒ disable ☐ enable
	Output C-2	☒ disable ☐ enable
	Sub2 module output	☐ disable ☒ enable
	Output A-3	☒ disable ☐ enable
	Output B-3	☒ disable ☐ enable
	Output C-3	☒ disable ☐ enable

Fig3.7 parameter window "Switch output con fig"

The following window is visible when the parameter "Output..." is selected as "enable" in the window of Fig. 4.7.

-.- Flush mounted Switch and IO,10A > Output A-1		
Input A	If bus voltage recovery,contact is	unchange
Input B	If bus voltage failure,contact is	unchange
Input C	Set the reply mode of switch status	respond only read request
Input D	Delay switch function	☐ disable ☒ enable
Input E	Delay time for switch on [0..65535s]	0
Input F	Delay time for switch off [0..65535s]	0
LED	Scene function	☒ disable ☐ enable
Switch output config		

Fig3.8 parameter window "Output..."

"If bus voltage recovery , contact is"

This parameter is set to the position of the relay contacts after the bus voltage is restored.

Options:

- un change
- open
- close
- As before bus voltage fail

When "un change" is selected, the relay contacts of this output will not operate after the bus voltage is restored;

When "open" is selected, the relay contact of this output is broken after the bus voltage is restored;

When "close" is selected, the relay contact of this output closes after the bus voltage is restored.

When “as before bus voltage fail” is selected, the relay contacts of this output will be operated to the position before power down after the bus voltage is

“If bus voltage failure , contact is”

This parameter is set at the contact position of the relay after the bus is powered down.

Options:

- **Un change**
- **open**
- **close**

“set the reply mode of switch status”

This parameter sets the mode in which the device sends messages to report the current switching state of the relay, with three options to choose from.

Options:

- **Respond only read request**
- **Respond after change**
- **Respond always**

By selecting “Respond only read request”, the object “status” sends the current switching status to the bus only when the device receives a request to read the switching status of this output from another bus device or from the bus;

By selecting “Respond after change”, the object “status” immediately sends a message to the bus to report the current status when the switching status of the channel is changed;

By selecting “Respond always”, the object “status” sends the current switching status to the bus every time the relay is triggered.

“Delay switch function”

This parameter is used to activate
the time delay switch function

Options: Disable/Enable

“Delay time for switch on : (0...65535s)”

This parameter is visible when the delay switch function is enabled. Setting
the time for the output delay to turn on:

Options: 0..65535

“Delay time for switch off : (0...65535s)”

This parameter is visible when the delay switch function is enabled. Sets
the time for the output to delay switching off.

Options: 0..65535

“Scene function”

This parameter is used to activate the scene function

Options: Disable/Enable

When Enable is selected, the following parameter setting screen is visible.

3.3.1. Parameter setting window “X:Scene” scene function

The parameter window is shown in Figure 3.9, and there are 8 scenarios for setting.

Fig3.9 parameter window“X: Scene”

“channel is assigned to (1...64 scene NO.,0=no allocation)”

Each output can be assigned 64 different scene numbers. 8 different Scenes can be set simultaneously per output. Options: 1...64, 0=no allocation . Note: The valid scene numbers in the parameter setting options are 1~64, and the corresponding message values are 0~63.

“--Standard output value is”

This parameter sets the switch state of the output when the scene is called.
Options: OFF/ON

4. Communication Object Description

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 each communication object of each function block is described in detail below.

Note: "C" in the property bar of the table below represents the communication function of the communication object;

"W" represents the value of the communication object can be rewritten by the bus;

"R" represents the value of the communication object can be read through the bus;

"T" stands for communication object with transmission function ; "U" means that the value of the communication

4.1. Communication object of "Input X"

	Number ^	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
	0	Input A	Short/Close,Switch			1 bit	C	-	W	T	-		Low
	1	Input A	Long/Open,Switch			1 bit	C	-	W	T	-		Low
	2	Input A	Disable, A			1 bit	C	-	W	-	-		Low

"Switch"Function

	Number ^	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
	0	Input A	Short,Switch			1 bit	C	-	W	T	-	switch	Low
	1	Input A	Long,Dimming			4 bit	C	-	W	T	-	dimming...	Low
	2	Input A	Disable, A			1 bit	C	-	W	-	-		Low

"Switch/dimming"Function

	Number ^	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
	0	Input A	Short/Close,1bit value			1 bit	C	-	-	T	-		Low
	1	Input A	Long/Open,1bit value			1 bit	C	-	-	T	-		Low
	2	Input A	Disable, A			1 bit	C	-	W	-	-		Low

"Value/Force output"Function

	Number ^	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
	0	Input A	Short/Close,scene			1 byte	C	-	-	T	-		Low
	1	Input A	Long/Open,scene			1 byte	C	-	-	T	-		Low
	2	Input A	Disable, A			1 bit	C	-	W	-	-		Low

“Scene control”Function

	Number ^	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
	0	Input A	Up/Down,Blind			1 bit	C	-	-	T	-		Low
	1	Input A	Stop/Adjust,Blind			1 bit	C	-	-	T	-		Low
	2	Input A	Disable, A			1 bit	C	-	W	-	-		Low

“Shutter control”Function

Fig4.1 communication object of “Input X”

No.	Object function	Name	Type	Flags	DPT
0	Short/Close,Switch	Input X	1bit	C,W, T	1.001DPT_Switch
1	Long/Open,Switch	Input X	1bit	C,W, T	1.001DPT_Switch
This communication object is used to trigger the switch operation.“Short/Close” is an output object corresponding to a short operation or a rising edge operation. “Long/Open” is an output object corresponding to long or falling edge operation.					
0	Short,Switch	Input X	1bit	C,W, T	1.001DPT_Switch
This communication object is used to trigger the switch operation. telegram: 0---off; 1---on					
1	Long,Dimming	Input X	4bit	C,W, T	3.007 DPT_Dimming control

This communication object is used to trigger the dimming operation.

When the message value is 1~7, it is downward dimming, the larger the value in this range, the smaller the downward dimming amplitude is, the largest downward dimming amplitude is 1, the smallest is 7, and 0 is stopping dimming; when the input value is 9~15, it is upward dimming, the larger the value in this range, the smaller the upward dimming amplitude is, the largest upward dimming amplitude is 9, the smallest upward dimming amplitude is 15, and 8 is stopping dimming.

0	Short/Close, 1bit/4bit/1byte/ 2byte value	Input X	1bit/4bit/ 1byte/2byte	C,T	1.001 DPT_Switch/ 3.007 DPT_Dimming control/ 5.010 DPT_counter pulses 7.001 DPT_pulses
1	Long/Open, 1bit/4bit/1byte/ 2byte value	Input X	1bit/4bit/ 1byte/2byte	C,T	

This communication object is used to send contact input values. The range of values that can be sent is determined by the data type, which is set by the parameter "Reaction on short operation or closing the contact"/ "Reaction on long operation or opening the contact"

0	Short/Close, Scene	Input X	1byte	C,T	18.001 DPT_Scene Control
1	Long/Open, Scene	Input X	1byte	C,T	18.001 DPT_Scene Control

This communication object sends an 8bit instruction to call or store a scene. The following describes the meaning of the 8bit instruction in detail. Let an 8bit instruction be (binary code):

FXNNNNNNNN

F: Calling the scene for '0'; storing the scene for '1';

X: 0;

NNNNNN: Scenes no. (0,63) .

The parameter setting option is 1~64. In fact, the scene message received by the communication object "Scene" corresponds to 0~63. I

If the scene is set in the parameter 1, the communication object "Scene" receives the scene as 0.
as follows:

Object message value	Description
0	Recall Scene 1
1	Recall Scene 2
2	Recall Scene 3
...	...
63	Recall Scene 64
128	Storage scene 1
129	Storage scene 2
130	Storage scene 3
...	...
191	Storage scene 64

0	Up/Down,Blind	Input X	1bit	C,T	1.008DPT_up/down
The communication object is used to send the position of the curtain. Telegram: 0——Upward moving curtains/blinds 1——Downward moving curtains/blinds					
1	Stop/Adjust,Blind	Input X	1bit	C,T	1.007DPT_Step
This communication object is used to stop the operation of the curtains or to adjust the angle of the blinds.					
2	Disable	Input X	1bit	C,W	1.003DPT_enable
This communication object is used to disable/enable the function of the input channel.					

Table 4.1 communication object table of“Input X”

Number *	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
18	LED 1	LED 1			1 bit	C	-	W	-	-		Low
19	LED 2	LED 2			1 bit	C	-	W	-	-		Low
20	LED 3	LED 3			1 bit	C	-	W	-	-		Low
21	LED 4	LED 4			1 bit	C	-	W	-	-		Low
22	LED 5	LED 5			1 bit	C	-	W	-	-		Low
23	LED 6	LED 6			1 bit	C	-	W	-	-		Low

Fig.4.2 communication object of“LED”

4.2. Communication Object of “LED”

No.	Function	Name	Type	Flags	DPT
18	LED X	LED X	1bit	C,W	1.001DPT_Switch
This communication object is used to receive 1bit messages for switching instructions.					

Table 4.2 communication object table of “LED”

4.3. Communication object of“Switch output”

24	Main-Output A-1	Switch	1 bit	C - W - -	Low
25	Main-Output A-1	Status	1 bit	C R - T -	Low
26	Main-Output A-1	Delay switch	1 bit	C - W - -	Low
27	Main-Output A-1	Scene	1 byte	C - W - -	Low

Fig4.3 Communication object of“Switch output”

No	Function	Name	Type	Flags	DPT
24	Switch	Main/Sub-Output X	1bit	C,W	1.001DPT_Switch
This communication object is used to trigger switching operations Telegram“1”trigger on action Telegram“0”trigger off action					
25	Status	Main/Sub-Output X	1bit	C,R,T	1.001DPT_Switch
This communication object is used to report the switching status of the relay contacts.					
26	Delayswitch	Main/Sub-Output X	1bit	C,W	1.001DPT_Switch
This communication object is used to trigger a time delay switch.					
27	Scene	Main/Sub-Output X	1byte	C,W	18.001DPT_Scene Control

Sending a communication object 8bit Instruction calls or store scenes. Detailed 8bit the meaning of the directive

Set up a 8bit Orders for the (Binary code): XXNNNNNN

XX : 0 ;

NNNNNN: scene number (0...63).

Parameter setting Options are 1~64 Actually communication object "Scene" Corresponds to the telegram received is 0~63 . Such as parameter settings is the scene 1, Communication object "Scene" sends the scene for 0.

As follows:

Object message value	Description
0	Recall scene 1
1	Recall scene 2
2	Recall scene 3
...	...
63	Recall scene 64
128	Storage scene 1
129	Storage scene 2
130	Storage scene 3
...	...
191	Storage scene 64

Table 4.3 Communication object table of "Switch output"