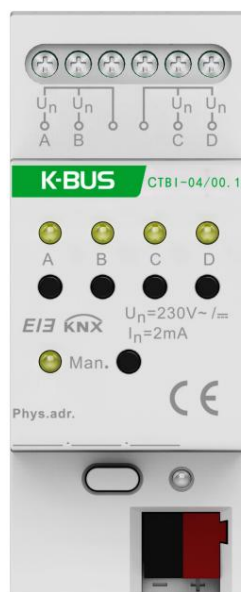


# manual

## K-BUS •R binary input module

Binary Inputs, 4-Fold\_V1.0

CTBI-04/00.1



KNX/EIB residential and building intelligent control system

## 注意事项

1、请远离强磁场、高温、潮湿等环境；



2、不要将设备摔落在地上或使之受到强力冲击；



3、不要使用湿布或具挥发性的试剂擦拭设备；



4、请勿自行拆卸本设备。

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## Chapter 1 Summary

Binary input modules are widely used in functional buildings and houses, and system planners will try their best to provide various possible applications to meet individual needs. The binary input module is installed together with other devices through the KNX bus to form a system, and functionally the operation is simple and intuitive, users can plan according to their own needs, and the system executes these functions.

This manual provides you with detailed technical information about the binary input module, including installation and programming details, and links to practical usage examples. The usage example explains how to use it.

### 1.1 Product and Function Overview

The binary input module is a modular installation device, designed according to EN 60 715, and can be installed in 35 mm D rail, the equipment uses screw terminals to realize electrical connection, and the bus connection is directly connected through KNX terminals, no additional external supply voltage. The allocation of physical addresses and the setting of parameters can use the engineering design tool software ETS (version ETS3 and above).

Each channel of the binary input module corresponds to a manual operation button and LED, which can be input and controlled by operating the button, and the LED indicates contact connection status. In the absence of additional voltage input, it can be input through this manual operation button. In case of manual operation, no additional supply voltage supply is required.

The binary input is used as an interface in the KNX operating system (via conventional keys/switches) or as a binary signal coupler (signal contact, such as 24V~230V input).

The binary input module has many functions and can be applied to a variety of application fields. The main functions are summarized as follows:

- Switching and dimming functions (available with one input operation)
- Operate curtain and blind functions (available with one input operation)
- Send value/force output function, such as temperature, time, etc.
- Scene control function (operation actuator group)
- Multiple operation functions to control multiple different workloads
- Switching sequence function to operate several workloads with one defined switching sequence
- Standard counting and differential counting functions, counting pulses and operating
- Disable channel function

Each channel of the binary input can use the various functions described above, and each input channel is independent of each other, the button on the front of the device

The button can be used to simulate the input status of the channel. When the channel has input, the corresponding LED indicator light will be on.



## K-BUS ® KNX/EIB binary input module

### Chapter Two Technical Parameters

<b>power supply voltage</b>	<b>21-30V DC via KNX bus</b>	
KNX current consumption	<12mA	
KNX standby power consumption	Max.360W	
<b>Number of input channels</b>	<b>4</b>	
Allowable input voltage range Un	0.....265V AC/DC	
Input current In	Max.2mA	
Signal level is 0 signal	0.....3V AC/DC	
Signal level is 1 signal	9.....265V AC/DC	
Allowable cable length	ÿ100 m (cross section is 1.5mm <sup>2</sup> )	
<b>connect</b>	<b>KNX</b>	<b>Bus connection terminal connection</b>
enter	Connection using screw terminals	
<b>terminal block screw terminal</b>	<b>0.2...2.5mm<sup>2</sup>, twisted into strands</b>	
	0.2...4.0mm <sup>2</sup> , single core	
Tightening torque	Max.0.6 Nm	
<b>Operation and indication programming LEDs and keys</b>	<b>assign physical address</b>	
Channel LEDs	Indicates the corresponding channel input status	
manual operation button	Change the channel input corresponding to the button	
Manual/Auto LED	Used to indicate manual/automatic mode status	
Manual/Auto button	For switching between manual and automatic modes	
<b>shell</b>	<b>IP 20</b>	<b>two DIN EN 60 529</b>
Security Level	II	two DIN EN 61 140
<b>temperature range operation</b>	<b>-5 °C ... 45 °C</b>	
storage	- 25 °C ... 55 °C	
transportation	- 25 °C ... 70 °C	
<b>design</b>	<b>Modular Mounting Rack (MDRC) Modular Mounting Rack, ProM</b>	
size	90x36x64mm	
<b>Mounting on 35mm DIN rail to DIN EN 60 715</b>		

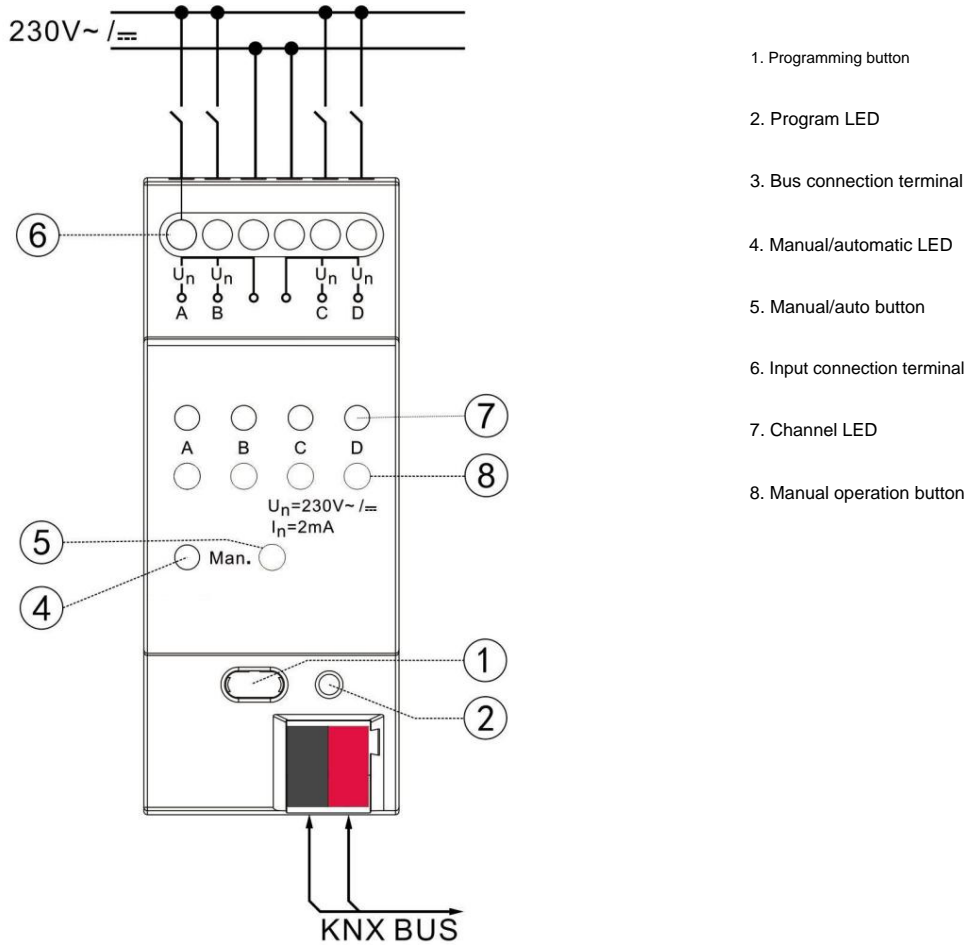


# K-BUS ® KNX/EIB binary input module

weight	0.1KG
Housing/Color	Plastic housing, off-white
certified	EIB/KNX certification
CE standard	Conforms to EMC standards and low voltage standards

## Chapter 3 Wiring Diagram and Dimension Diagram

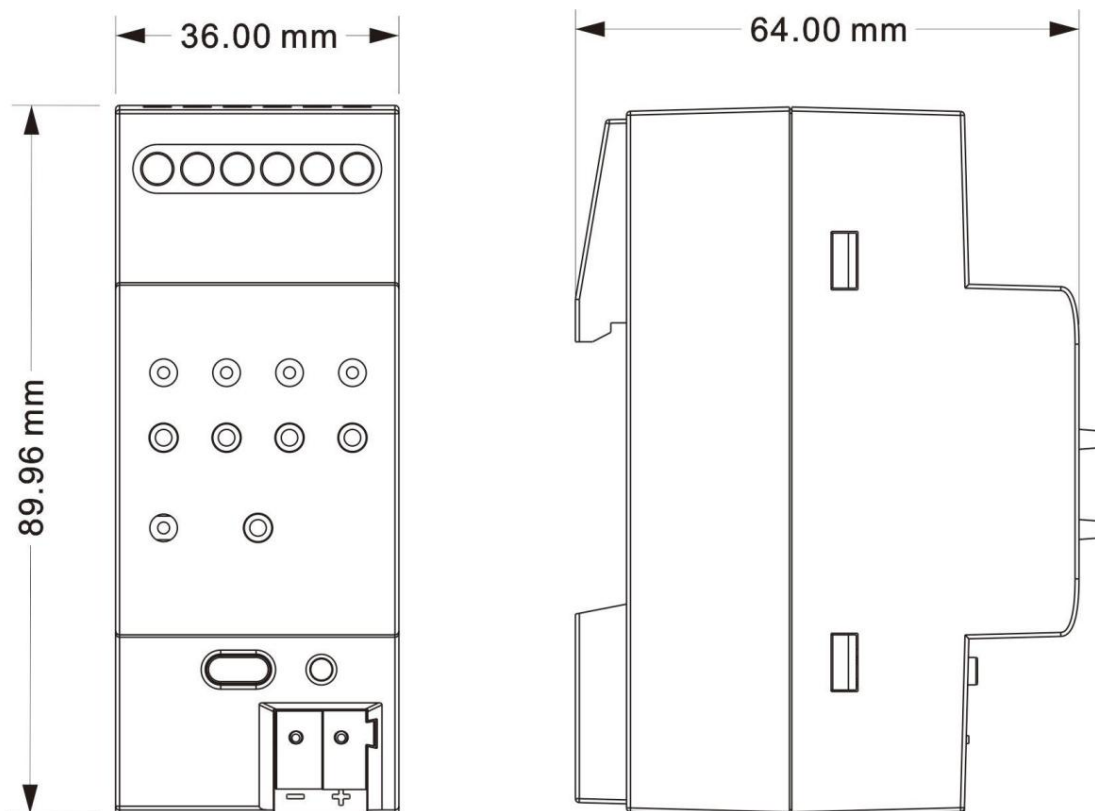
### 3.1 Wiring Diagram





# K-BUS ® KNX/EIB binary input module

## 3.2 Dimensional drawing






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## Chapter 4 Project Design and Application

### 4.1 Function overview

application	Maximum number of communication objects	Maximum number of group addresses	Maximum number of federated addresses
Binary Input 230V, 4 fold	34	105	105

The following functions can be set independently for each channel: (In the following chapters, the operation of binary input with a long input time is referred to as long operation, input shorter operations are called short operations)

#### ÿ Switch function

Switching lighting or scanning contacts such as dimmers and switch actuators; distinguishing between long/short operations; cyclically sending current switch values; modifying switch values.

#### ÿ Switch/dimming function

Switching and dimming of dimmable devices can be realized through one input operation or two input operations; the dimming method can be start/stop dimming

The light can also be dimmed gradually; one input operation can control the switch and dimming at the same time, or just control the dimming.

#### ÿ Send value/forced output function

Different data types can be sent (e.g. temperature value, time, scene, etc.); priority control in the switch actuator can also be activated; input

Distinguish long/short operation; long/short operation can send different data types; under short operation, input pulse rising edge/falling edge can also send different data types data type.

#### ÿ Scene control function

Recall and store the state of several executor groups. Actuator groups can be controlled via up to 6 independent objects.

#### ÿ Switch sequence function

Preset several actuator groups to operate in a sequence, such as a self-locking relay; it is also possible to operate several types of work in a fixed switching sequence

as load.

#### ÿ Counting function

The counting function is used to count the input pulses. Different data types and counting rates can be set. It can also be set whether to send the current

Before counting the value, a differential counting function can also be added. The differential count can be reset, and the count overflow can be reported, and the count can be stopped when the overflow occurs.

Therefore, it is very convenient for measuring daily consumption.

#### ÿ Multiple operation functions

Multiple functions can be triggered according to the frequency of operations, and one function can be triggered when a long operation is detected.

#### ÿ Shutter function

Curtains or blinds can be moved and adjusted by one input operation or two input operations, providing 8 operation modes.





• Disable channel function

Each channel of the device can be disabled individually via a communication object.

## Chapter 5 ETS System Parameter Setting Instructions

### 5.1 Parameter setting interface "General Setting"

The "General Setting" parameter setting interface is shown in Figure 5.1, where the number of messages sent to the bus by limiting the binary input is set.

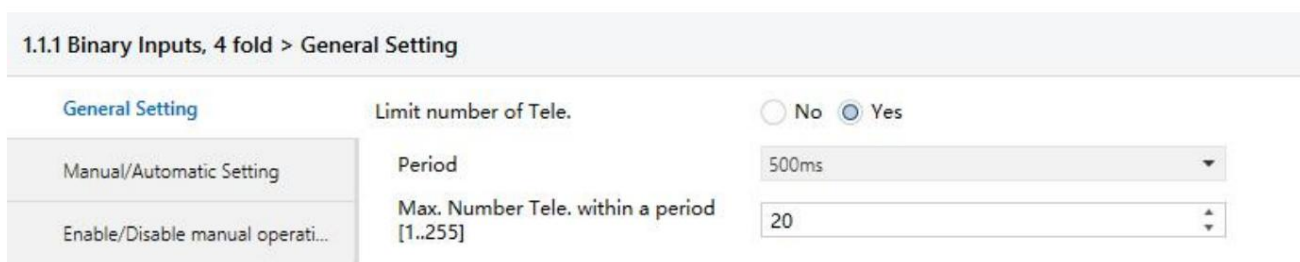


Figure 5.1 "General Setting" parameter setting interface

The bus voltage is restored, and the initialization time for device startup is about 5s.

Parameter: "Limit number of Tele."

This parameter is used to limit the number of binary input messages sent to the bus, mainly to reduce the burden on the bus. Options:

**Yes**

**No**

When the "Yes" option is selected, the parameter "Period" and the parameter "Max. Number Tele. Within a period" are visible.

Parameter: "Period"

Set here to limit the monitoring time for sending messages. Options:

**300ms**

**500ms**

.....

**10min**

After the bus voltage recovers and the device initialization is completed, the monitoring time starts counting and the number of sent messages is counted.

When the maximum number of packets is reached, no more packets will be sent on the bus until the set monitoring time ends. When this monitoring period ends, a

A new monitoring time starts, and the counting of packets restarts.

Parameter: "Max. Number Tele. Within a period"

This parameter sets the maximum number of packets that can be sent during the monitoring time. Options: 1...255

## 5.2 Parameter setting interface "Manual/Automatic Setting"

The "Manual/Automatic Setting" parameter setting interface is shown in Figure 5.2, to set the manual operation and automatic operation of the binary input,

Manual to automatic operation/automatic to manual operation by long pressing the manual/automatic button (about 2s, when the button is valid, the manual/automatic LED flashes three times)

Operation switching, under manual operation, the manual/automatic LED indicator light is on; under automatic operation, the manual/automatic LED is off, when the device

When connected to the bus, the device is in automatic operation, and under automatic operation, the manual operation button of each channel of the binary input is not executed.

operation.

Figure 5.2 "Manual/Automatic Setting" parameter setting interface

Parameter: "Manual/Automatic button"

This parameter is used to set the mode of enabling or disabling the manual/auto button, options:

**Enable/Disable by object**

**Enable**

If the "Enable/Disable by object" option is selected, the communication object "En/Dis Man./Auto" is enabled, and the object receives the message "0", then

Disable the manual/automatic button, at this time, the switching between manual operation and automatic operation will not be possible; if the message "1" is received, the manual/automatic button will be enabled.

button, at this time you can switch from manual to automatic operation/automatic to manual operation through this button.

If the option is "Enable", the manual/auto button is always enabled.

Parameter: "Manual to automatic method"

This parameter defines how to switch from manual operation to automatic operation, options:

**By push button**

**Automatically and by push button**

If the option is "By push button", long press the manual/automatic button to switch from manual to automatic operation/automatic to manual operation;

If the option is "Automatically and by push button", you can perform manual to automatic operation/automatic to

The automatic operation will not resume until the switching of manual operation or the time timing from manual to automatic operation set by parameters is completed.



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Parameter: "Manual to automatic after [10..60000] 1s"

This parameter is visible when the parameter "Manual to automatic method" option is "Automatically and by push button", use

It is used to set the time from manual operation to automatic operation, that is, the time required to automatically switch from manual operation to automatic operation. Options: 10..60000s.

This period of time is counted from the last time the channel button is pressed, and the timing is completed and switched to automatic operation.

Parameter: "Report on Man/Auto status change"

This parameter defines whether to send a message to report the current operation status when manual operation/automatic operation is switched. Options:

Yes

No

If the "Yes" option is selected, the communication object "Report Man/Auto Status" is enabled, the object sends a message "1", and the current operation is manual operation State; send message "0", the current operation is automatic operation state. When the operation state changes, the communication object will immediately report the current state to the bus.

### 5.3 Parameter setting interface "Enable/Disable manual operation"

The "Enable/Disable manual operation" parameter setting interface is shown in Figure 5.3. When the binary input is set to be operated manually, each channel

Whether the corresponding manual operation button can perform operation.

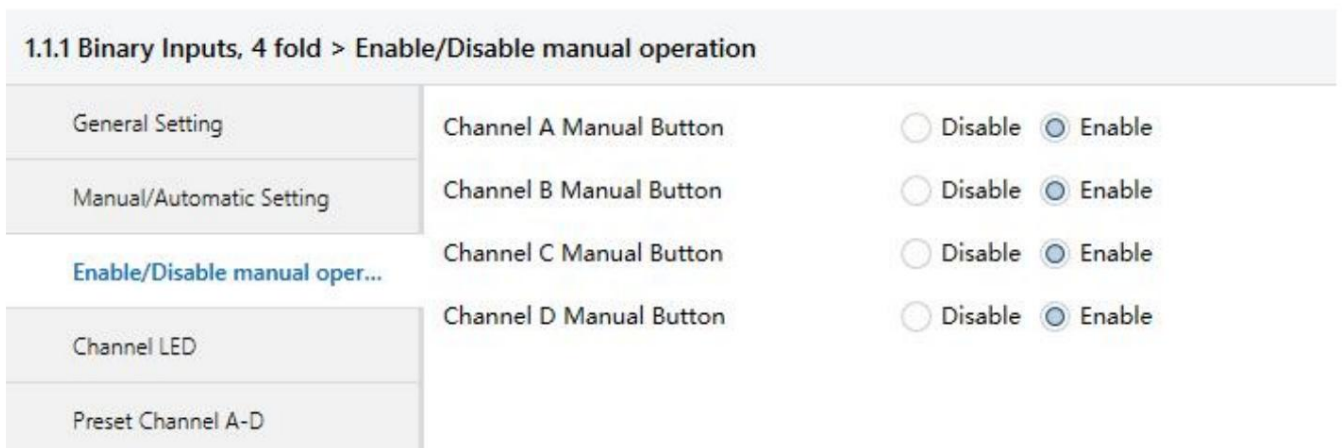


Figure 5.3 "Enable/Disable manual operation" parameter setting interface



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Parameter "Channel A...D Manual button"

This parameter is used to set whether to enable the manual operation button corresponding to each channel, and each channel can be set individually. Options:

**Enable**

**Disable**

When the option is Enable, the channel can be input through the manual operation button;

If the option is Disable, the manual operation button cannot perform operations.

In related safety systems, such as fault signal processing systems, manual operation buttons are generally not executable, which can better prevent man-made damage bad. When the manual operation button corresponding to the channel is not enabled, press the manual operation button, and the LED of the corresponding channel will not respond.

### 5.4 Parameter setting interface "Channel LED"

The "Channel LED" parameter setting interface is shown in Figure 5.4, and the way to set the LED indication of the binary input channel is applicable to the binary input channel.

Input manual operation and automatic operation.

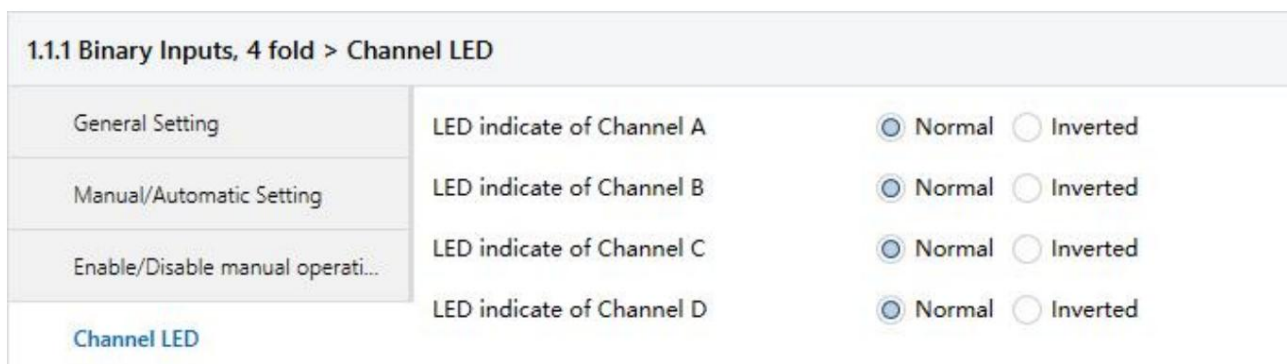


Figure 5.4 "Channel LED" parameter setting interface

Parameter "Channel A...X LEDs"

This parameter defines the channel LED indication mode, normal indication or inverted indication, each channel can be set independently. Options:

**Normal**

**Inverted**

The option is "Normal", which means that the LED is normal indication. When the contact is closed (with signal input), the LED is on; when the contact is open (without signal input), the LED is off.

If the option is "Inverted", it means that the LED is inverted. When the contact is closed (with signal input), the LED is off; when the contact is open (without signal input), the LED is on.

## 5.5 Parameter setting interface "Preset Channel A~D"

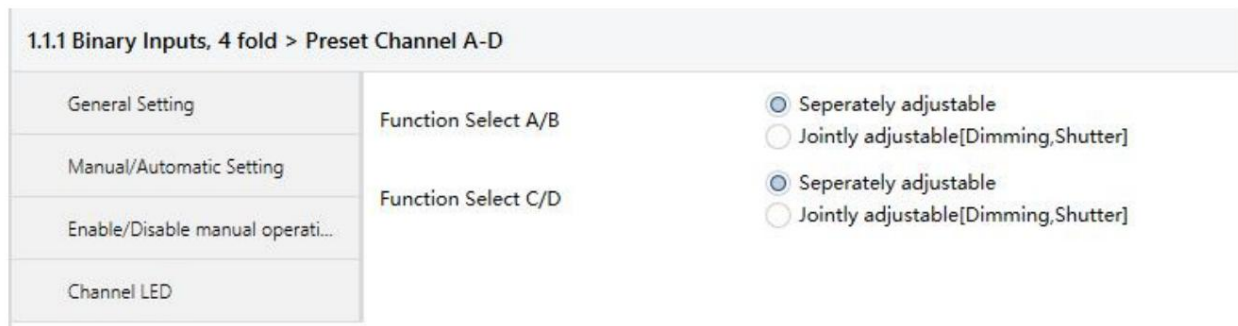
The "Preset Channel A~D" parameter setting interface is shown in Figure 5.5. There are two working modes for binary input channels, one is independent working mode

mode, each channel is independent of each other, and each channel can be set individually. The other is the combined working method, which consists of two channels working together.

Such as the combination of channel A and channel B, the combination of channel C and channel D, each combination can be set independently, mainly used for dimming function and shutter function,

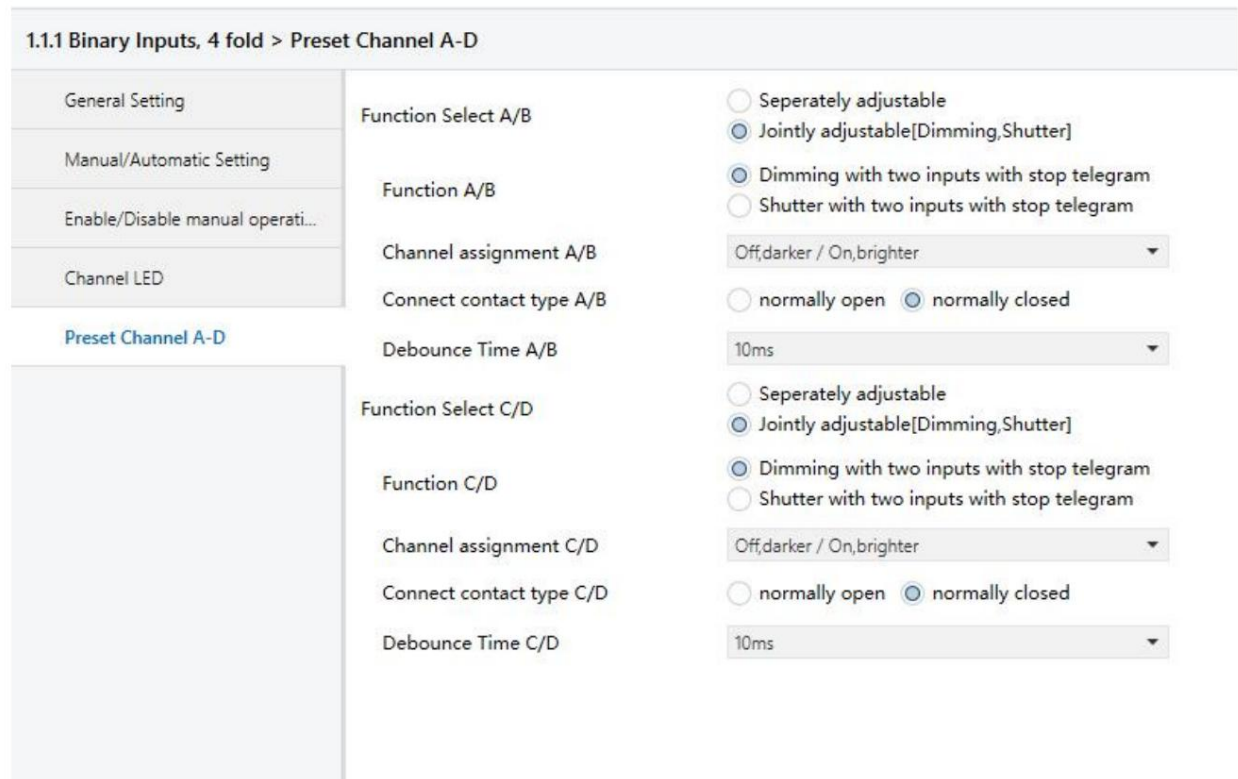
The dimmable device can be switched and dimmed at the same time through one input operation, and the curtain can also be moved at the same time through one input operation

and adjust.



The screenshot shows the '1.1.1 Binary Inputs, 4 fold > Preset Channel A-D' interface. On the left, there is a sidebar menu with four items: 'General Setting', 'Manual/Automatic Setting', 'Enable/Disable manual operati...', and 'Channel LED'. The main content area is divided into two sections. The top section is for 'Function Select A/B' and the bottom section is for 'Function Select C/D'. Each section has two radio button options: 'Seperately adjustable' (selected) and 'Jointly adjustable[Dimming,Shutter]'.

Figure 5.5 (1) "Preset Channel A~D" parameter setting interface (independent working mode)



The screenshot shows the '1.1.1 Binary Inputs, 4 fold > Preset Channel A-D' interface in combined working mode. The sidebar menu is the same as in Figure 5.5 (1). The main content area is divided into two sections: 'Function Select A/B' and 'Function Select C/D'. Each section has three radio button options: 'Seperately adjustable', 'Jointly adjustable[Dimming,Shutter]' (selected), and 'Dimming with two inputs with stop telegram'. Below the radio buttons, there are dropdown menus for 'Channel assignment A/B' and 'Channel assignment C/D', both set to 'Off,darker / On,brighter'. There are also radio button options for 'normally open' and 'normally closed' (selected), and a dropdown menu for 'Debounce Time A/B' and 'Debounce Time C/D', both set to '10ms'.

Figure 5.5 (2) "Preset Channel A~D" parameter setting interface (combined working mode)



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### 5.5.1 Combination working mode of binary input channels

Combination working mode of binary input channels, each combination is independent of each other and can be set independently, and the assigned parameters and communication objects are

Similarly, the A/B channel combination is used as an example to introduce. Parameter settings are shown in Figure 5.5 (2):

Parameter: "Function Select X/Y"

This parameter sets the working mode of the X/Y channel, whether it is an independent working mode or a combined working mode. Options:

**Separately adjustable**

**Jointly adjustable (dimming, shutter)**

When the option is "Jointly adjustable (dimming, shutter)", the X/Y channel works in combination, and the following parameters can be seen:

Parameter: "Function X/Y"

This parameter sets the function of the X/Y channel combination, whether it is used for dimming input or blind input. Options:

**Dimming with two inputs with stop telegram**

**Shutter with two inputs with stop telegram**

The combination function of the channel is to make dimming input or blind input through two inputs. When the binary input is in automatic operation, through two

6V~265V input; when in manual operation, the input is performed by the corresponding manual operation buttons of the two channels.

Parameter: "Channel assignment X/Y"

This parameter is used to set the function allocation of each channel input when the X/Y channel combination is used. When the channel input is a dimming input, the options are:

**Off, darker / On, brighter**

**On, brighter / Off, darker**

**Toggle, darker / Toggle, brighter**

**Toggle, brighter / Toggle, darker**

If the option is "Off, darker / On, brighter", it means that when the X channel contact is closed, the channel input is the signal of "switch off, brighter",

When the contact is open, the channel inputs the signal of "stop dimming"; when the contact of the Y channel is closed, the channel inputs the signal of "open the switch, dimming".

When the contact is open, the channel inputs the signal of "stop dimming". The function allocation of other option channel input is similar to this option. By the communication object "Switch,

X/Y" controls the on/off input and the object "Dimming , X/Y" controls the dimming input.

When the channel input is shutter input, the options are:

**MOVE Down/MOVE Up with stop**

**MOVE Up/MOVE Down with stop**

If the option is "MOVE Down/MOVE Up with stop", it means that when the X channel contact is closed, the shutter will move down;

The louver stops moving down; when the Y channel contact is closed, the louver moves up, and when the contact is disconnected, the louver stops moving up. The function of another option channel input



## K-BUS ® KNX/EIB binary input module

An option similar to this can be assigned. The up and down movement of the blinds is controlled by the communication object "Shutter move up/down, X/Y", and the object "Shutter stop, X/Y" to stop the adjustment of the blinds.

yy"Connect contact type X/Y"

This parameter is used to set the contact type of the X/Y combined channel connection. In general, the contact connection is normally open or normally closed.

Options:

**Normally closed**

**Normally open**

The parameters introduced in this chapter take the normally open type (Normally open) as an example, and the operation of the normally closed type is opposite to that of the normally open type.

Parameter "Debounce Time A/B (C/D)"

The debounce time is set here to prevent unnecessary multiple operations caused when the contact is triggered multiple times during the jitter time, that is, the minimum contact input

Effective time. Options:

**10ms/20ms/...../150ms**

### 5.5.2 Independent working mode of binary input channel

In this mode of operation of binary input, each channel is independent of each other and can be set individually. Parameters assigned to each of the following channels

It is the same as the communication object, take channel A as an example for introduction.

Parameter setting interface "Channel X"

The "Channel X" parameter setting interface is shown in Figure 5.6, where the function of each channel is set, and the function options are:

**No function**

**Switch**

**Switch/Dimming**

**Value / Forced output**

**Scene Control**

**Switching sequence**

**Counter**

**Multiple operation**

**Shutter control**

Each function is assigned corresponding parameters and communication objects, which are described in detail in the following chapters.



# K-BUS ® KNX/EIB binary input module

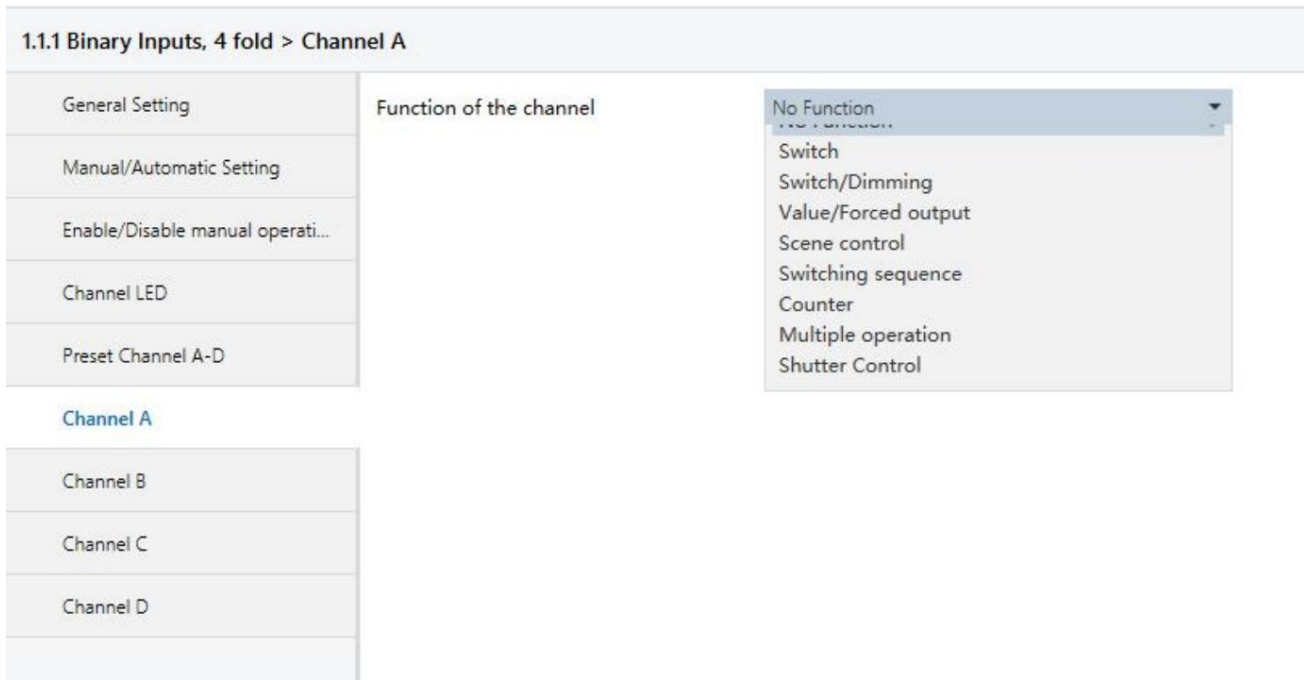


Figure 5.6 "Channel X" parameter setting interface

## 5.5.2.1 "Switch" function

The "Switch" parameter setting interface is shown in Figure 5.7 and Figure 5.9. In Figure 5.7, long/short operation is not distinguished, while in Figure 5.9, long/short operation is distinguished.

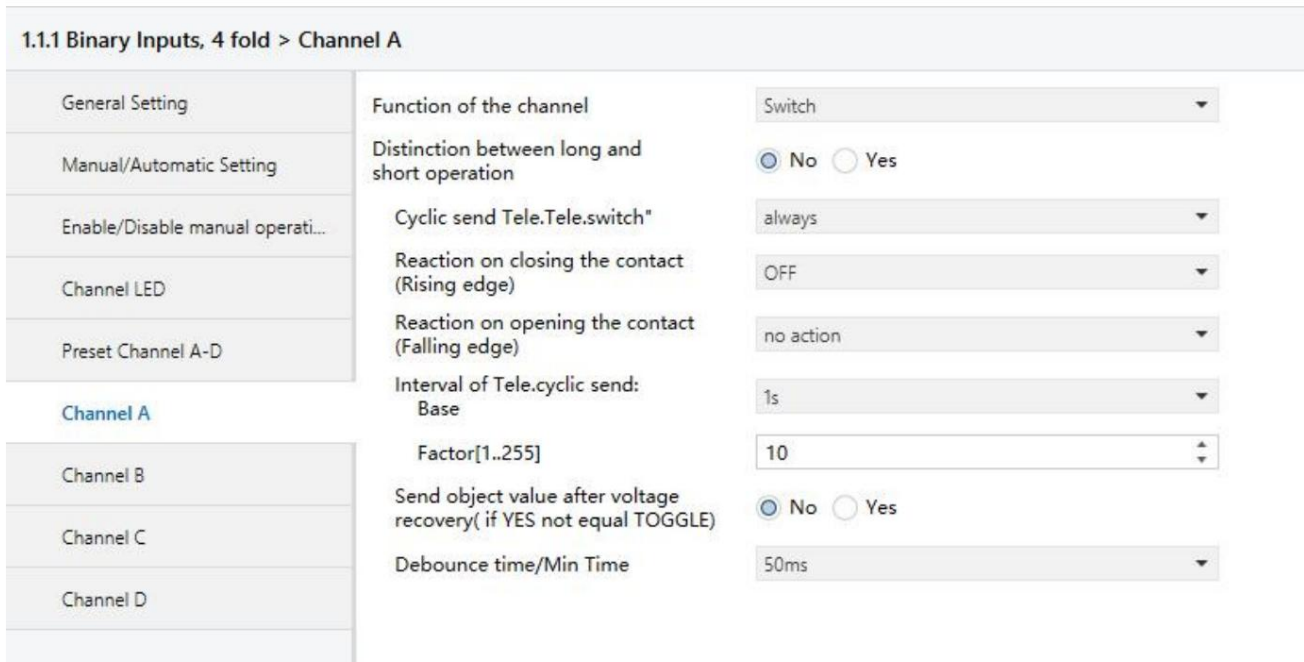


Figure 5.7 "Switch" parameter setting interface (long/short operation is not distinguished)



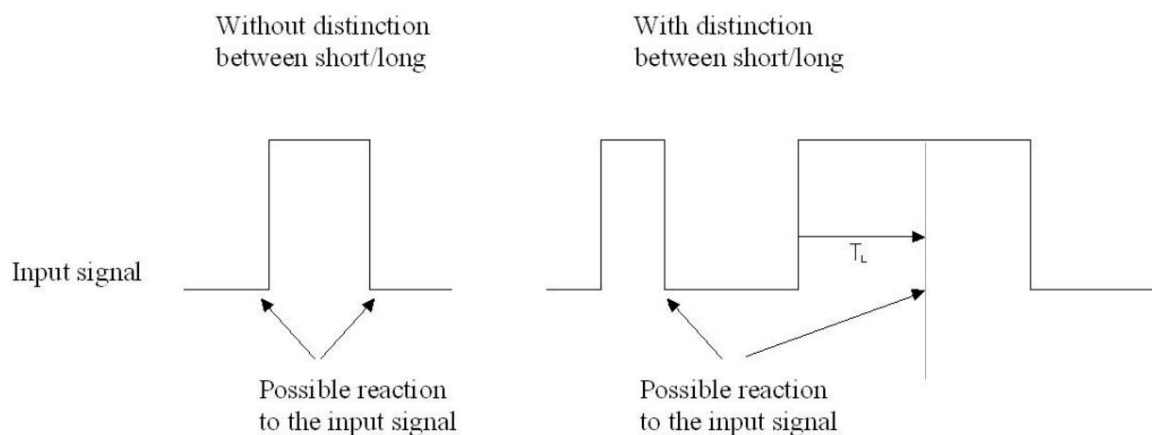


## K-BUS ® KNX/EIB binary input module

### Parameter "Distinction between long and short operation"

This parameter sets whether the contact input distinguishes long/short operation. If you select the "Yes" option, the operation can only be determined after the input reaches a certain time.

The operation is still a short operation, and the contact will perform the set action. The long operation processing process is shown in the figure:



Options:

**Yes**

**No**

Note: The long operation process in the following chapters is the same as here.  $T_L$  refers to the long operation time, that is, to determine an input operation as

The time required for long operations.

### Parameter "Cyclical send Tele. Switch"

This parameter is visible when long/short operations are not distinguished. Here it is set whether to cyclically send the current switch value of the object "Switch, X" to the bus.

Options:

**No**

**Always**

**If switch off**

**If switch on**

When the parameter option "Always" is selected, no matter whether the current switch value of the object "Switch, X" is 0 or 1, the current switch value will be cycled ring sent to the bus.

When the parameter option is set to "If switch off" or "If switch on", it will only loop if the option corresponds to the object's current switch value send.



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yy: "Reaction on closing the contact(rising edge)"

yy: "Reaction on opening the contact(falling edge)"

This parameter is visible when long/short operations are not distinguished. This sets the switch value sent by the object "Switch, X" when the operation is performed. Options:

- No action**
- Off**
- On**
- Toggle**
- Stop cyclic send**

When the option is "Toggle", the inversion operation is performed, that is, the current switch value is inverted. If the current operation is "On" operation, after inversion, execute Perform "Off" operation.

When the option is "Stop cyclic send", if there is a message sent cyclically, the operation will stop sending the message cyclically until there is a The new input value is sent.

When the option is "No action", no action is performed.

Parameter: "Interval of Tele. cyclic send: Base x Factor"

Here set the time interval for cyclically sending messages, this parameter can be seen when setting cyclically sending, cyclically sending period: Base x Factor

Base options: **0.5s/1s/ .../1h**

Factor options: **1...255**

yy: "Send object value after voltage recovery (if yes not equal toggle)"

This is to set whether to send the current switch value of the object "Switch, X" to the bus when the bus is powered on again. This parameter does not distinguish between long and short operations.

Visible while working. Options:

- Yes**
- No**

If the option is "Yes", the current switch value of the object "Switch, X" will be sent to the bus after the bus is reset, but only when the parameter "Reaction When neither on closing the contact(rising edge)/opening the contact(falling edge)" option is "Toggle", the object "Switch, X" Only the value can be sent to the bus. If any parameter option is "Toggle", no value will be sent to the bus. If the current operation is "No reaction" or "Stop cyclic transmission" is also sent with no value.

Parameter: "Debounce time"

The debounce time is set here to prevent unnecessary multiple operations caused when the contact is triggered multiple times during the jitter time, that is, the minimum contact input

**Effective time. Options: 10ms/20ms/.../150ms/Min. operation**

The option "Min. operation" can only be set when there is no distinction between long and short operations. This option is different from other options, here the contact operation

The minimum effective time not only determines the minimum effective time of contact input, but also determines the minimum effective time of contact disconnection. The setting interface is shown in the figure

5.8 shows:

**1.1.4 Binary Inputs, 4 fold > A-MiniTime**

General Setting	Minimum operation time:base	1s
Manual/Automatic Setting	Minimum operation time:Factor [1..255]	10
Enable/Disable manual operati...		
Channel LED		
Preset Channel A-D		
Channel A		

A-MiniTime

Figure 5.8 "X-Mini Time" parameter setting interface

Parameter: "Minimum operation time: BasexFactor"

The minimum effective time of contact input and contact disconnection is: BasexFactor

Base options: **100ms/ .../1h**

Factor options: **1-255**

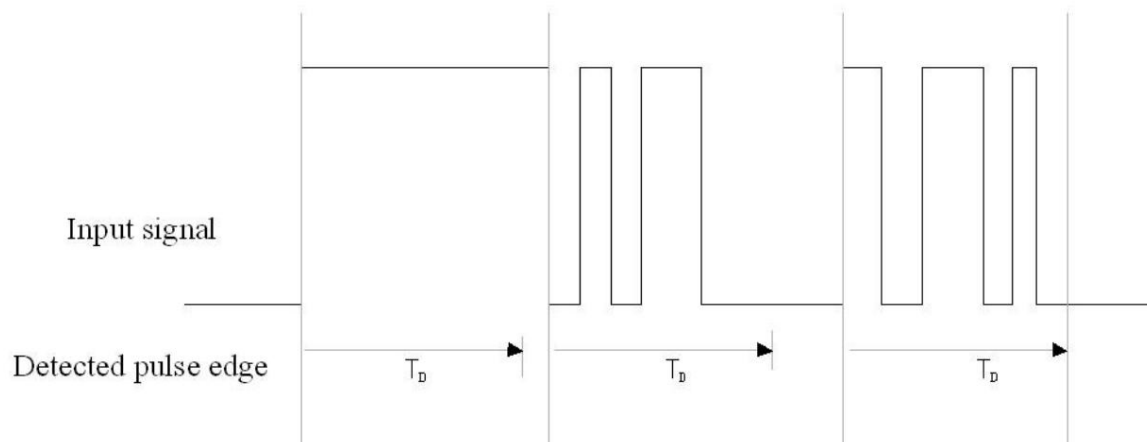
Note: The setting interface and meaning of the "Min. operation" option of the parameter "Debounce time" in the following chapters are the same as those here.

same.

The specific process of de-jittering: once the device detects a pulse edge signal input, and the jittering time  $T_D$  starts timing at the same time, during this time

Other input edge signals will be ignored and will not respond, until the jitter time is over, the pulse edge signal will be detected again, such as

As shown in the figure:



The specific process of de-jittering in the following chapters is the same as here.



## K-BUS ® KNX/EIB binary input module

1.1.1 Binary Inputs, 4 fold > Channel A

General Setting	Function of the channel	Switch
Manual/Automatic Setting	Distinction between long and short operation	<input type="radio"/> No <input checked="" type="radio"/> Yes
Enable/Disable manual operati...	Connect contact type	<input type="radio"/> normally open <input checked="" type="radio"/> normally closed
Channel LED	Reaction on short operation	ON
Preset Channel A-D	Reaction on long operation	no action
<b>Channel A</b>	Long operation after: Base	1s
Channel B	Factor[2..255]	10
Channel C	Number of objects for short/long object operation	<input checked="" type="radio"/> 1object <input type="radio"/> 2objects
	Debounce time	50ms

Figure 5.9 "Switch" parameter setting interface (differentiate long/short operation)

### Parameter "Connected contact type"

This parameter can be seen when distinguishing long/short operation, and it is used to set the connection type of the contact. In general, the contact connection is normally open type, or It is normally closed type. Options:

**Normally open**

**Normally closed**

The parameters introduced in this chapter take the normally open type (Normally open) as an example, and the operation of the normally closed type is opposite to that of the normally open type.

### Parameter "Reaction on short operation" or "Reaction on long operation"

This parameter is only visible when distinguishing long/short operations. Here set the operation to be performed when long/short operation is performed. When the input is determined to be a long operation or short operation, the object value is updated immediately. Options:

**No action**

**Off**

**On**

**Toggle**

### Parameter "Long operation after: base×Factor"

This parameter is visible when distinguishing long/short operations, and the effective time of long operations is set here. When the input contact connection time exceeds the time set here, the operation is determined to be a long operation, otherwise it is a short operation. Time (TL) = Base × Factor

Base options: **100ms/1s/..... /1h**

Factor options: **2-255**



## K-BUS ® KNX/EIB binary input module

Parameter: "Number of objects for short/long object operation"

This parameter is visible when distinguishing long/short operations. Here you can set one or two communication objects. When setting one communication object, long/short operation

One communication object is used for the operation; when two communication objects are set, the long/short operation uses a separate communication object. Options:

**1object**

**2objects**

Note: If the option is "2 objects", the long/short operation operates on different values.

### 5.5.2.2 "Switch/Dimming" function

The "Switch/Dimming" parameter setting interface is shown in Figure 5.10, which is visible when the channel function "Switch/Dimming" option is selected.

Enable this function to switch and dim dimmable devices at the same time through one input operation.

**1.1.1 Binary Inputs, 4 fold > Channel A**

General Setting	Function of the channel	Switch/Dimming
Manual/Automatic Setting	Connect contact type	<input checked="" type="radio"/> normally open <input type="radio"/> normally closed
Enable/Disable manual operati...	Dimming functionality	<input checked="" type="radio"/> Dimming and switching <input type="radio"/> Only dimming
Channel LED	Reaction on short operation	ON
Preset Channel A-D	Reaction on long operation	Dim BRIGHTER/DARKER with start BRIGHTER
<b>Channel A</b>	Long operation after	1 s
Channel B	Debounce time	50ms
Channel C	Dimming mode	<input type="radio"/> Start-stop-Dimming <input checked="" type="radio"/> Steps dimming
Channel D	Brightness change on every sent	1.56%
	Interval of Tele.cyclic send	1 s

Figure 5.10 "Switch / Dimming, X" parameter setting interface

Parameter: "Connect contact type"

Set the contact connection type here. In general, whether the contact connection is normally open or normally closed. Options:

**Normally open**

**Normally closed**

The parameters introduced in this chapter take the normally open type (Normally open) as an example, and the operation of the normally closed type is opposite to that of the normally open type.



## K-BUS ® KNX/EIB binary input module

### Parameter "Dimming functionality"

This parameter defines the dimming function of the binary input, which can control the dimming device to dim, and can also switch on and off at the same time. Options:

**Dimming and switching**

**Only dimming**

If the option is "Only dimming", then only dimmable devices can be dimmed, regardless of long/short operation, once the contact input is valid,

Dimming is performed immediately, without delay to determine whether the contact input is a long operation or a short operation.

If the option is "Dimming and Switching", after the contact input is valid, it will take a delay to determine whether it is a long operation or a short operation.

Operation, if the contact input is a long operation, then dim the dimmable device, if it is a short operation, perform a switch operation.

### Parameter "Reaction on short operation"

When the option of parameter "Dimming functionality" is "Dimming and Switching", this parameter is visible and can be set through this parameter

The operation after the object "Switch, X" is triggered, that is, the switching action performed when the contact input is a short operation. Options:

**No action**

**Off**

**On**

**Toggle**

### Parameter "Reaction on long operation"

When the parameter "Dimming functionality" option is "Dimming and Switching", this parameter is visible, here set the contact input as long

The operation performed during operation, relative dimming, brightening or dimming of dimmable devices, and the input is disconnected to stop dimming. Options:

**Dimming BRIGHTER**

**Dimming DARKER**

**Dim BRIGHTER / DARKER with start BRIGHTER**

**Dim BRIGHTER / DARKER with start DARKER**

The option "Dim BRIGHTER / DARKER with start DARKER" indicates that the contact input is a long operation, which can perform brightening or to perform dimming, but the initial execution is dimming, and the subsequent operations will invert the current operation.

### Parameter "Long operation after"

When the parameter "Dimming functionality" option is "Dimming and Switching", this parameter is visible, here define the contact input as long

The effective time of the operation. If the contact input time exceeds the time set here, the contact input is determined as a long operation. Options:

**0.3s/0.5s/...../10s**



## K-BUS ® KNX/EIB binary input module

### Parameter "Reaction on operation"

When the parameter "Dimming functionality" option is "Only dimming", this parameter is visible, the contact input does not distinguish between long and short operations, and the executed

The operation is the same as the option of the parameter "Reaction on long operation", it performs relative dimming, brightening or dimming to dimmable devices. Options:

**Dimming BRIGHTER**

**Dimming DARKER**

**Dim BRIGHTER / DARKER with start BRIGHTER**

**Dim BRIGHTER / DARKER with start DARKER**

### Parameter "Debounce time"

The debounce time is set here to prevent unnecessary multiple operations caused when the contact is triggered multiple times during the jitter time, that is, the minimum contact input

**Effective time. Options: 10ms/20ms/.../150ms/Min. operation**

The option "Min. operation", can only be set when the parameter "Dimming functionality" option is "Only dimming", set

The interface is shown in Figure 5.8.

### Parameter "Dimming mode"

The relative dimming mode is set here, whether it is the start-stop dimming mode or the gradual dimming mode. Options:

**Start-stop dimming**

**Steps dimming**

If the "Start-stop dimming" option is selected, the relative dimming method is the start-stop dimming method, and a dimming or brightening message is sent during dimming.

When dimming ends, send a stop message. In the start-stop dimming mode, the dimming message does not need to be sent cyclically.

If the "Steps dimming" option is selected, the relative dimming method is a stepwise dimming method, and the dimming message is sent cyclically.

That is, a message to stop dimming is sent.

### Parameter "Brightness change on every sent"

When the parameter "Dimming mode" option is "Steps dimming", this parameter can be seen, and here it can be changed by sending a dimming message cyclically.

**Brightness (percentage). Options:**

**100%**

**50%**

.....

**1.56%**



# K-BUS ® KNX/EIB binary input module

Parameter "Interval of Tele. Cyclic send"

When the parameter "Dimming mode" option is "Steps dimming", this parameter can be seen, and the time interval for sending dimming messages cyclically is set here.

Options:

- 0.3s
- 0.5s
- .....
- 10s

### 5.5.2.3 "Value/Forced output" function

The "Value/Forced output" parameter setting interface is shown in Figure 5.11. When the channel function "Value/Forced output" option is selected visible.

1.1.1 Binary Inputs, 4 fold > Channel A

General Setting	Function of the channel	Value/Forced output
Manual/Automatic Setting	Distinction between long and short operation	<input type="radio"/> No <input checked="" type="radio"/> Yes
Enable/Disable manual operati...	Connect contact type	<input checked="" type="radio"/> normally open <input type="radio"/> normally closed
Channel LED	Long operation after: base	1s
Preset Channel A-D	Factor[2..255]	10
Channel A	Debounce time	50ms
Channel A Force out Value		

Figure 5.11 (1) "Value / Force output, X" parameter setting interface (distinguish between long and short operations)

1.1.1 Binary Inputs, 4 fold > Channel A

General Setting	Function of the channel	Value/Forced output
Manual/Automatic Setting	Distinction between long and short operation	<input checked="" type="radio"/> No <input type="radio"/> Yes
Enable/Disable manual operati...	Send object value after voltage recovery	<input checked="" type="radio"/> No <input type="radio"/> Yes
Channel LED	Debounce time/Min Time	50ms
Preset Channel A-D		
Channel A		
Channel A Force out Value		

Figure 5.11 (2) "Value / Force output, X" parameter setting interface (long/short operation is not distinguished)





## K-BUS ® KNX/EIB binary input module

1.1.1 Binary Inputs, 4 fold > Channel A Force out Value

General Setting	Reaction on operation/rising edge	1 bit value[0/1]
Manual/Automatic Setting	Output value[0.1]	<input checked="" type="radio"/> 0 <input type="radio"/> 1
Enable/Disable manual operati...	Reaction on long operation/falling edge	1 bit value[0/1]
Channel LED	Output value[0.1]	<input checked="" type="radio"/> 0 <input type="radio"/> 1
Preset Channel A-D		
Channel A		
<b>Channel A Force out Value</b>		
Channel B		
Channel C		
Channel D		

Figure 5.11 (3) "Force out Value, X" parameter setting interface

### Parameter "Distinction between long and short operation"

This parameter sets whether the contact input distinguishes long/short operation. If you select the "Yes" option, the operation can only be determined after the input reaches a certain time.

The operation is still a short operation, and the contact will perform the set action. Options:

**Yes**

**No**

### Parameter "Connect contact type"

This parameter can be seen when distinguishing long/short operation, here set the contact connection type, in general, the contact connection is normally open type, or

Normally closed type. Options:

**Normally open**

**Normally closed**

The parameters introduced in this chapter take the normally open type (Normally open) as an example, and the operation of the normally closed type is opposite to that of the normally open type.

### Parameter "Long operation after: Base×Factor[2...255]"

This parameter is visible when distinguishing long/short operations, and the effective time of long operations is set here. When the input contact connection time exceeds the time set here

, the operation is determined to be a long operation, otherwise it is a short operation. Time (TL) = Base × Factor

Base options: **100ms/1s/...../1h**

Factor options: **2-255**



## K-BUS ® KNX/EIB binary input module

Parameter "Send object value after voltage recovery"

This parameter is visible when the long/short operation is not distinguished, as shown in Figure 5.11 (2), where it is set whether to send the object when the bus power is restored

"Output..., long/falling(short/rising) , current value of X" to the bus. If the option is "Yes", the object "Output...,

long/falling(short/rising), the current value of X" is sent to the bus. Options:

**Yes**

**No**

Parameter "Reaction on operation/rising edge" / "Reaction on long operation/falling edge"

When the contact input distinguishes long/short operation, this parameter is used to set the data type sent when long/short operation; when the contact input does not distinguish long/short

In short operation, this parameter is used to set the type of data sent when the edge pulse of the contact input is on the rising or falling edge. The parameter setting interface is as

As shown in Figure 5.11 (3), the options are:

**No reaction**

**1bit value [0/1]**

.....

**4 byte value [0...4294967295]**

Parameter "Output value[...]"

The parameter setting interface is shown in Figure 5.11 (3), where the data value sent when the operation is executed is set. The range of values depends on the

The selected data type.

Parameter "Debounce time"

The debounce time is set here to prevent unnecessary multiple operations caused when the contact is triggered multiple times during the jitter time, that is, the minimum contact input

Effective time. Options:

10ms/20ms/...../150ms/Min. **operation**

The option "Min. operation" can only be set when there is no distinction between long and short operations. The setting interface is shown in Figure 5.8.

## 5.5.2.4 "Scene control" function

The "Scene control" parameter setting interface is shown in Figure 5.12, which is visible when the channel function "Scene control" option is selected. Enable

This function can recall and store the status of several actuator groups.

**1.1.1 Binary Inputs, 4 fold > Channel A**

<b>General Setting</b>	Function of the channel	Scene control ▾
Manual/Automatic Setting	Connect contact type	<input type="radio"/> normally open <input checked="" type="radio"/> normally closed
Enable/Disable manual operati...	Store Scene	On long operation ▾
Channel LED	long operation after	0.5 s ▾
Preset Channel A-D	Debounce time	50ms ▾

Channel A

Figure 5.12 (1) "Scene control, X" parameter setting interface

**1.1.1 Binary Inputs, 4 fold > Scene A Page 1**

<b>General Setting</b>	Control of actuator group A by	1 bit value [ON/OFF] ▾
Manual/Automatic Setting	Preset value actuator group A [ON/OFF]	<input type="radio"/> OFF <input checked="" type="radio"/> ON
Enable/Disable manual operati...	Store group A by object	<input checked="" type="radio"/> no <input type="radio"/> yes
Channel LED	Control of actuator group B by	1 bit value [ON/OFF] ▾
Preset Channel A-D	Preset value actuator group B [ON/OFF]	<input type="radio"/> OFF <input checked="" type="radio"/> ON
Channel A	Store group B by object	<input checked="" type="radio"/> no <input type="radio"/> yes
Scene A Page 1	Control of actuator group C by	1 bit value [ON/OFF] ▾
Scene A Page 2	Preset value actuator group C [ON/OFF]	<input type="radio"/> OFF <input checked="" type="radio"/> ON
	Store group C by object	<input checked="" type="radio"/> no <input type="radio"/> yes



## K-BUS ® KNX/EIB binary input module

1.1.1 Binary Inputs, 4 fold > Scene A Page 2

General Setting	Control of actuator group D by	1 bit value [ON/OFF]
Manual/Automatic Setting	Preset value actuator group D [ON/OFF]	<input type="radio"/> OFF <input checked="" type="radio"/> ON
Enable/Disable manual operati...	Store group D by object	<input checked="" type="radio"/> no <input type="radio"/> yes
Channel LED	Control of actuator group E by	1 bit value [ON/OFF]
Preset Channel A-D	Preset value actuator group E [ON/OFF]	<input type="radio"/> OFF <input checked="" type="radio"/> ON
Channel A	Store group E by object	<input checked="" type="radio"/> no <input type="radio"/> yes
Scene A Page 1	Control of actuator group F by	1 bit value [ON/OFF]
Scene A Page 2	Preset value actuator group F [ON/OFF]	<input type="radio"/> OFF <input checked="" type="radio"/> ON
Channel B	Store group F by object	<input checked="" type="radio"/> no <input type="radio"/> yes

Figure 5.12 (2) "Scene X Page 1/2, X" parameter setting interface

### Parameter "Connect contact type"

Set the contact connection type here. In general, whether the contact connection is normally open or normally closed. Options:

**Normally open**

**Normally closed**

The parameters introduced in this chapter take the normally open type (Normally open) as an example, and the operation of the normally closed type is opposite to that of the normally open type.

### Parameter "Store scene"

The way to store the scene is set here. Options:

**No**

**On long operation**

**With object value='1'**

**On long operation and object value='1'**



## K-BUS ® KNX/EIB binary input module

The stored procedures of different storage methods are described as follows:

storage method	stored procedure
On long operation	<p>When the contact input is a long operation, the communication object "Store scene, X" sends a message "1" to the bus, and the object "Output..., group A...F" sends a read message, if the object "store scene" has received a "1" message is received, there is no need to send it again. During long operations, the values of the objects "Output..., group A...F" can be modified via the bus.</p> <p>At the end of the long operation, the communication object "Store scene, X" sends a message "0" to the bus to end the modification; or the communication object "Store scene, X" receives a message of 0, and ends the modification.</p>
If object value='1'	<p>If the communication object "Store scene, X" receives the message "1", the object "Output..., group A...F" sends a read message, during which the value of the object "Output..., group A...F" can pass The bus is modified.</p> <p>When the object "Store scene, X" receives the message "0", the modification ends.</p>
On long operation and object value='1'	<p>If the communication object "Store scene, X" receives the message "1", and the contact input is a long operation, the object "Output..., group A...E" sends a read message, during the long operation, the object "Output..., group A...E" can be modified via the bus. After the long press operation ends, the object "store scene, X" sends a message "0" to end the modification; or the communication object "Store scene, X" receives the message "0" to end the modification.</p> <p>If the object "store scene, X" does not receive the message "1", the long operation is treated as a short operation reason.</p>

Parameter "Long operation after"

When the parameter "Store scene" option is "On long operation" or "On long operation and object value='1'", this parameter is visible,

Set the effective time of long operation here. If the input contact connection time exceeds the time set here, the operation is determined as a long operation. Options:

**0.3s/0.5s/...../10s**

Parameter "Debounce time"

The debounce time is set here to prevent unnecessary multiple operations caused when the contact is triggered multiple times during the jitter time, that is, the minimum contact input

**Effective time. Options: 10ms/20ms/.../150ms**

Parameter "Control of actuator group A...F by"

Here set the data type of each actuator group, up to six actuator groups can be set individually, the data type of the parameter setting determines

The data type of the communication object "Output 1bit/1byte/2byte, group A...F". Options:

**1bit value [ON/OFF]**

**1byte value[scale 0...100%]**

**1byte value[0..255]**

**2byte value [float]**



## K-BUS ® KNX/EIB binary input module

Parameter "Preset value actuator group A...F"

This parameter sets the preset value for the actuator group.

Parameter "Store group A...F by object"

This parameter sets whether the preset value of the actuator group is allowed to be modified through the bus. Options:

**Yes**

**No**

When the option is "Yes", the preset value can be modified by the bus through the object "Output 1bit/1byte/2byte, group A...F". When the bus

When power on and reset again, these values will be modified to the preset values, that is, the parameter setting values.

### 5.5.2.5 "Switching sequence" function

The "Switching sequence" parameter setting interface is shown in Figure 5.13. When the channel function "Switching sequence" option is selected visible. When this function is enabled, the object value can be modified step by step through one operation, and each object corresponds to a switch level.

1.1.1 Binary Inputs, 4 fold > Channel A

General Setting	Function of the channel	Switching sequence
Manual/Automatic Setting	Connect contact type	<input type="radio"/> normally open <input checked="" type="radio"/> normally closed
Enable/Disable manual operat...	No. of objects	3 level
Channel LED	Type of switching sequence	Sequentially on/off(several push buttons)
Preset Channel A-D	Function on operation	<input checked="" type="radio"/> Switch upwards <input type="radio"/> Switch Downwards
Channel A	Sequence is: 000,001,011,111	<NOTE Information
Channel B	Debounce time/Min Time	50ms

Figure 5.13 "Switching sequence, X" parameter setting interface

Parameter "Connect contact type"

Set the contact connection type here. In general, whether the contact connection is normally open or normally closed. Options:

**Normally open**

**Normally closed**

The parameters introduced in this chapter take the normally open type (Normally open) as an example, and the operation of the normally closed type is opposite to that of the normally open type.



## K-BUS ® KNX/EIB binary input module

### Parameter "No. of objects"

The number of objects is set here, that is, the number of switch stages. There are several switch stages, and there are several corresponding communication objects. Options:

**2level**

**3level**

**4 level**

**5level**

Example: The option is "3level", which means there are three communication objects: "level-1" , "level-2" , "level-3". The first operation modifies "level-1"

The value of "level-2" is modified by the second operation, the value of "level-3" is modified by the third operation, and the value of "level-3" is modified by the fourth operation...

The switching sequence is: 000, 001, 011, 111, 011... The data sent to the bus is the value of the modified communication object, that is, the changed

that bit of data. Communication object "level increment/decrement . X" is used to achieve the switch level up and down. '1' is a level up, '0' is down

level one.

Different options, different numbers of communication objects, and different switch series, but in the case of the same switch sequence type, their processing is the same

akin.

### Parameter "Type of switching sequence"

This parameter sets the type of the switch sequence, and the process of modifying the object is different for different switch sequence types. Options:

**Sequentially on/off (one push button)**

**Sequentially on/off (several push buttons)**

**All combinations**

Take "3level" as an example to illustrate the difference between them (the changed bit data is sent on the bus, data "0"=OFF, "1"=ON):

Example of switching sequence type modification process	
Sequentially on/off (one push button)	...-000-001-011-111-011-001-...
Sequentially on/off (several push buttons)	000-001-011-111 or 111-011-001-000
All combinations	...-000-001-011-010-110-111-101-100-... (Gray code)

### Parameter "Function on operation"

This parameter is visible when the switch sequence type is "Sequentially on/off (several push buttons)".

The upper level, or the lower level execution. Options:

**Switch upwards**

**Switch downwards**

The execution direction of the option "Switch upwards" is "000-001-011-111", and the execution direction of the option "Switch downwards" is

"111-011-001-000". After the bus is powered on and reset, the current value is 000. If the option is "Switch downwards", you will not see it when performing operations.

The effect can be passed through the object "level increment/decrement . X" to achieve a few levels before operating.



## K-BUS ® KNX/EIB binary input module

The parameter "Sequence is..."

The processing process of the object is noted here for different switch sequence types.

Parameter: "Debounce time/Min Time"

The debounce time is set here to prevent unnecessary multiple operations caused when the contact is triggered multiple times during the jitter time, that is, the minimum contact input

**Effective time. Options: 10ms/20ms/.../150ms/Min. operation**

The setting interface of the option "Min. operation" is shown in Figure 5.8.

### 5.5.2.6 "Counter" function

The "Counter, X" parameter setting interface is shown in Figure 5.14, which is visible when the channel function "Counter" option is selected.

Enable the "Counter" function to count the pulses of the input device and, if necessary, add a differential count

Function. Differential counting and standard counting are triggered by pulses at the same time, the data types they can set are the same, and their operations are mutually independent.

The counting functions of differential counting and standard counting are similar, the difference is that differential counting can reset the counting value (counting from the initial value),

And can stop counting through the bus.

The parameter settings in Figure 5.14(1) are applicable to standard counting and differential counting, the parameter settings in Figure 5.14(2) are applicable to standard counting, and Figure 5.14(3)

The parameter settings in are for differential counting. The specific setting of parameters is described as follows:

1.1.1 Binary Inputs, 4 fold > Channel A		
General Setting	Function of the channel	Counter
Manual/Automatic Setting	Debounce time/Min Time	50ms
Enable/Disable manual operati...	Enable Differential Counter	<input type="radio"/> No <input checked="" type="radio"/> Yes
Channel LED	Pulse detection on	Closing contact(rising edge)
Preset Channel A-D	Mode of counter	<input checked="" type="radio"/> Normal +1 <input type="radio"/> Manual set
Channel A	Send object value after voltage recover	<input checked="" type="radio"/> No <input type="radio"/> Yes
Main Counter A	Cyclically send conter value Base:	100ms
	Factor[1.255]:	10

Figure 5.14 (1) "Counter, X" parameter setting interface





## K-BUS ® KNX/EIB binary input module

Parameter: "Debounce time/Min Time"

The debounce time is set here to prevent unnecessary multiple operations caused when the contact is triggered multiple times during the jitter time, that is, the minimum contact input

**Effective time. Options: 10ms/20ms/.../150ms/Min. operation**

The setting interface of the option "Min. operation" is shown in Figure 5.8.

Parameter: "Enable differential counter"

Set here whether to enable differential counting, options:

**Yes**

**No**

When the option is "Yes", it can be seen in Figure 5.14 (3), the parameter setting interface of differential counting.

Parameter: "Pulse detection on"

This parameter is used to define the counting mode of the binary input. Options:

**Closing contact (rising edge)**

**Opening contact (falling edge)**

**Both (rising and falling)**

The option is "Closing contact (rising edge)", which means that when the contact is closed (pulse input rising edge), counting is performed.

The option is "Opening contact (falling edge)", which means that when the contact is open (falling edge of pulse input), counting is performed.

The option is "Both (rising and falling)", which means that the counting will be performed when the contact is closed and opened (pulse input rising edge and falling edge).

Parameter: "Mode of counter"

This parameter sets the counting mode of the binary input. Options:

**Normal+1**

**Manual set**

The option "Normal+1" means normal counting, one pulse counts once, and one count value is added for each count;

Option "Manual set", manually set the counting method, you can set how many input pulses are needed to count once, and you can also set the counting

A count value to increment.

Parameter: "Divider: number of input pulse for one counter step[1 ... 10000]"

This parameter is visible when the counting mode is "Manual set". Here, set how many counting pulses are input and the counter counts once. Can

Input pulse range: 1 ... **10000**



# K-BUS ® KNX/EIB binary input module

Factor: one counter step changes counter value by [-10000...10000]

This parameter is visible when the counting mode is "Manual set". Here, the counter is set to count once, and the standard count and differential count increase

Count value, that is, the step value for counting once. Step value can be set range: -10000...10000

Send object value after voltage recover

Here it is set whether to send the counting initial value to the bus after bus reset. Options:

Yes

No

Cyclically send counter value - Base x Factor

Here set the time interval for sending the current count value cyclically.

Base options: **100ms/1s/1min/1h**

Factor Options: **1...255**

Notice:

Counting law: when the step value is negative, the initial value of the count is the high limit value, and the count starts from the high limit value. When the count value is less than the low limit value,

When an overflow occurs, subtract the low limit value from the count value, add the high limit value, and then add 1 to continue counting; when the step value is positive, the initial count

The initial value is the low limit value, counting starts from the low limit value, when the count value is greater than the high limit value, overflow occurs, at this time subtract the high limit value from the count value, plus

The lower limit value, and then minus 1, continue to count. The device automatically compares the upper and lower limits. (The parameters below the high/low limit are introduced) Standard counting and differential

The counting laws are the same.

**1.1.1 Binary Inputs, 4 fold > Main Counter A**

General Setting	Data width of counter	16 bit[-32768-32767]
Manual/Automatic Setting	Counter limit value 1 [0]	0
Enable/Disable manual operati...	Counter limit value 2 [-32768..32767]	0
Channel LED	Send counter value on change	<input checked="" type="radio"/> no <input type="radio"/> yes
Preset Channel A-D	Send counter value cyclically	<input checked="" type="radio"/> no <input type="radio"/> yes
Channel A		
<b>Main Counter A</b>		
Differential Counter A		

Figure 5.14 (2) "Main Counter X" parameter setting interface



## K-BUS ® KNX/EIB binary input module

### Parameter "Data width of counter"

This parameter sets the data type of the standard count, and the data type determines the range of the count.

The type of the communication object "MCounter : Counter value, X" depends on the data type set by this parameter. Options:

**8bit [0..255]**

**16bit [-32768...32767]**

**16bit [0..65535]**

**32bit [-2147470000...2147470000]**

### Parameter "Counter limit value 1/2"

This parameter sets the high/low limit value of the standard count, one of the limit values is set to 0, and the other limit value can be set within the range set by the previous parameter

Data type determination.

### Parameter "Send counter value on change"

When the current count value of the standard count changes, whether to send a new count value to the bus is set here. Options:

**Yes**

**No**

### Parameter "Send counter value cyclically"

Set here whether to cyclically send the current count value of the standard count to the bus, and the time interval for cyclically sending is set in the above parameter "Cyclically

send counter value: Base x Factor" setting. Options:

**Yes**

**No**

1.1.1 Binary Inputs, 4 fold > Differential Counter A		
General Setting	Data width of counter	16 bit[-32768-32767]
Manual/Automatic Setting	Counter limit value 1 [-32768..32767]	0
Enable/Disable manual operati...	Counter limit value 2 [-32768..32767]	1000
Channel LED	Mode of counter	Like main counter set
Preset Channel A-D	When counter crossing limit value	<input checked="" type="radio"/> Continue circular counting <input type="radio"/> Stop until reset
Channel A	Send counter value on change	<input checked="" type="radio"/> no <input type="radio"/> yes
Main Counter A	Send counter value cyclically	<input checked="" type="radio"/> no <input type="radio"/> yes
<b>Differential Counter A</b>		

Figure 5.14 (3) "Differential Counter X" parameter setting interface



## K-BUS ® KNX/EIB binary input module

### Parameter "Data width of counter"

This parameter sets the data type of differential counting, and the data type determines the counting range.

The type of the communication object "Dcounter.: Counter value, X" depends on the data type set by this parameter. Options:

**8bit [0..255]**

**16bit [-32768..32767]**

**16bit [0..65535]**

**32bit [-2147470000..2147470000]**

### Parameter "Counter limit value 1/2"

This parameter sets the high/low limit value of differential counting, and the settable range of high/low limit value is determined by the data type set by the previous parameter.

### Parameter "Mode of counter"

This parameter indicates that the counting mode of differential counting is the same as that of standard counting.

### Parameter "When counter crossing limit value"

This parameter sets whether to continue counting or stop counting when the differential count exceeds the limit. Options:

**Continue circular counting**

**Stop until reset**

When the option is "Continue circular counting", when the count exceeds the limit and overflow occurs, it will continue to count according to the counting rule;

When the option is "Stop until reset", when the count exceeds the limit and overflow occurs, the count will stop, and the communication object "Dcounter: stop,

X" sends a message '0', reporting that the counting stops, until the count value is reset, or the object "Dcounter: stop, X" receives a message '1' to continue to count.

### Parameter "Send counter value on change"

Here it is set whether to send a new count value to the bus when the current count value of the differential count changes. Options:

**Yes**

**No**

### Parameter "Send counter value cyclically"

Here it is set whether to cyclically send the current count value of differential counting to the bus, and the time interval of cyclic sending is set in the above parameter "Cyclically

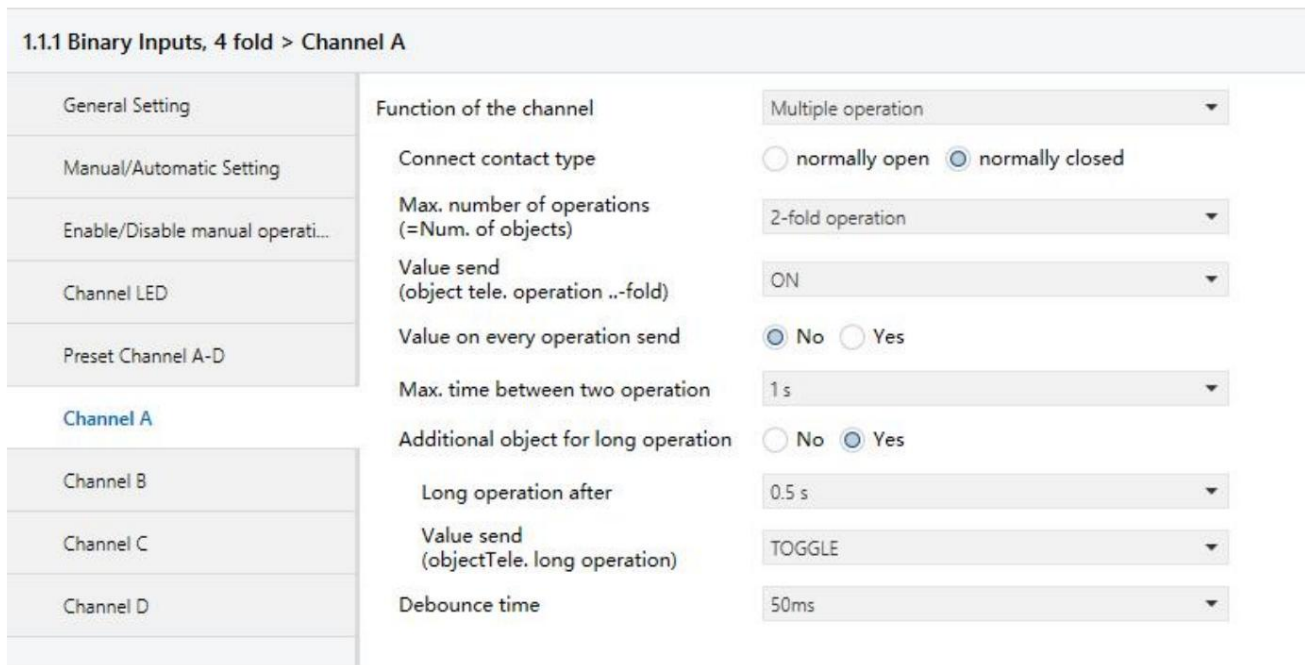
send counter value: Base x Factor" setting. Options:

**Yes**

**No**

### 5.5.2.7 "Multiple operation" function

"Multiple operation, X" parameter setting interface is shown in Figure 5.15, when the channel function "Multiple operation" option is selected visible. Enable this function, if multiple inputs are detected within a certain period of time, the value of the specified operation object can be changed, for example, different lights Light scenes can be controlled with him.



1.1.1 Binary Inputs, 4 fold > Channel A		
General Setting	Function of the channel	Multiple operation
Manual/Automatic Setting	Connect contact type	<input type="radio"/> normally open <input checked="" type="radio"/> normally closed
Enable/Disable manual operati...	Max. number of operations (=Num. of objects)	2-fold operation
Channel LED	Value send (object tele. operation ..-fold)	ON
Preset Channel A-D	Value on every operation send	<input checked="" type="radio"/> No <input type="radio"/> Yes
Channel A	Max. time between two operation	1 s
Channel B	Additional object for long operation	<input type="radio"/> No <input checked="" type="radio"/> Yes
Channel C	Long operation after	0.5 s
Channel D	Value send (objectTele. long operation)	TOGGLE
	Debounce time	50ms

Figure 5.15 "Multiple operation, X" parameter setting interface

#### Parameter "Connect contact type"

Set the contact connection type here. In general, whether the contact connection is normally open or normally closed. Options:

**Normally open**

**Normally closed**

The parameters introduced in this chapter take the normally open type (Normally open) as an example, and the operation of the normally closed type is opposite to that of the normally open type.

#### Parameter "Max. number of operations [=Num. of objects]"

This parameter is used to specify the maximum number of operations allowed, which determines the number of communication objects "Output X-fold". Options:

**Single operation**

**2-fold operation**

**3-fold operation**

**4-fold operation**



## K-BUS ® KNX/EIB binary input module

Parameter: "Value send (object "Tele. Operation ... fold")"

When setting the contact input here, the object "Output X-fold" sends the value on the bus, that is, the action performed. Options:

**On**

**Off**

**Toggle**

When the option is "Toggle", the current value is negated.

Parameter: "Value on every operation send"

This sets whether to send each operation value. Options:

**Yes**

**No**

If the option is "Yes", the object value will be updated and sent after each operation. Taking "3-fold operation" as an example, the object "output 1-fold" (p. one operation), "output 2-fold" (the second operation), and "output 3-fold" (the third operation) are sent.

If the option is "No", the current value will be sent to the bus only after the last operation is delayed (the delay time is the interval between two operations)

superior.

Parameter: "Max. time between two operations"

The maximum time interval between two operations is set here. If there is no operation during this time, the object "output 1-fold" will be resent. Can

options:

**0.3s**

**0.5s**

...

**10s**

Parameter: "Additional object for long operation"

This sets whether to activate long operations. Options:

**Yes**

**No**

Note: In the "Multiple operation" function, the long/short operation of the contact input operates on different values.



## K-BUS ® KNX/EIB binary input module

### Parameter "Long operation after"

When the parameter "Additional object for long operation" option is "Yes", this parameter is visible, here define the contact input as long operation Effective time. If the contact input time exceeds the time set here, the contact input is determined as a long operation. Available options: **0.3s/0.5s/.../10s**

### Parameter "Value send (object "Tele. Long Operation")"

This parameter is visible when the long operation is activated. When the long operation is set here, the object "output long-fold" sends the value on the bus, that is, the execution Actions. Options:

**On**

**Off**

**Toggle**

When the option is "Toggle", the current value is negated.

### Parameter "Denounce time"

The debounce time is set here to prevent unnecessary multiple operations caused by the contact being triggered multiple times during the jitter time, that is, the valid contact input **time. Options: 10ms/20ms/.../150ms**

#### 5.5.2.8 "Shutter Control" function

The "Shutter control, X" parameter setting interface is shown in Figure 5.16, which is visible when the channel function "Shutter control" option is selected.

Enable this function to control the blinds with one input or with two input operations.

1.1.1 Binary Inputs, 4 fold > Channel A		
General Setting	Function of the channel	Shutter Control
Manual/Automatic Setting	Connect contact type	<input type="radio"/> normally open <input checked="" type="radio"/> normally closed
Enable/Disable manual operati...	Operation functionality type	1-push-button,short=stepping,long=moving
Channel LED	Short:move UP/DOWN Long :Lamella	Note about fuctionality
Preset Channel A-D	Long operation after	0.5 s
Channel A	Debounce time	50ms

Figure 5.16 "Shutter control, X" parameter setting interface

### Parameter "Connect contact type"

Set the contact connection type here. In general, whether the contact connection is normally open or normally closed. Options:



## K-BUS ® KNX/EIB binary input module

Normally open

Normally closed

The parameters introduced in this chapter take the normally open type (Normally open) as an example, and the operation of the normally closed type is opposite to that of the normally open type.

Parameter "Operation functionality type"

The operation type of the shutter is set here, and the type and function are specifically described in the following table:

<b>1-push-button, short=stepping, long=moving</b>	
short operation	stop/adjust (object values "0" and "1" are sent alternately)
long operation	Alternate "move up" or "move down" (object values "0" and "1" are sent alternately)
<b>1-push-button, short=moving, long=stepping</b>	
short operation	Alternate "move up" or "move down" (object values "0" and "1" are sent alternately)
long operation	Stop/adjust (always in the input state and can be sent cyclically); move in the opposite direction (object values "0" and "1" are sent alternately)
<b>1-push-button-operation, moving</b>	
operate	To operate, send commands in sequence: ... -> move up -> stop / adjust up -> move down -> stop / adjust down ->...
<b>1-switch-operation, moving</b>	
Start of operation (contact closure)	Alternate "move up" or "move down" (object values "0" and "1" are sent alternately)
End of operation (contacts open)	stop/adjust
<b>2-push-button, standard</b>	
short operation	"Stop/Adjust Up" or "Stop/Adjust Down" (set by parameter)
long operation	"Move up" or "Move down" (set by parameter)
<b>2-push-button, moving[shutter]</b>	
operate	To operate, send commands in sequence: ... -> move up -> stop/adjust up -> ... or ... -> Move Down -> Stop/Adjust Down -> ... (up/down movement is set by parameter)
<b>2-push-button, stepping</b>	
operate	"Stop/Adjust Up" or "Stop/Adjust Down" (set by parameter) (Always in the input state and can be sent cyclically)
<b>2-switch-operation, moving[shutter]</b>	
operation start	"Move up" or "Move down" (set by parameter)
operation end	"Stop/Adjust Up" or "Stop/Adjust Down" (send value followed by operation start same as the value sent when





## K-BUS ® KNX/EIB binary input module

Parameter "Tele\_STOP/lamella adj" Cyclical send"

This parameter is used when the shutter control type is "1-push-button, short=moving, long=stepping" and "2-push-button, stepping"

It can be seen that **the time interval for** cyclically sending the object "stop/lamella adj" is set . **Options: 0.3s/0.5s/.../10s**

Parameter "Reaction on short operation"

This parameter is visible when the shutter control type is "2-push-button, standard", and it is used to set the action performed when the contact input is a short operation. Can

options:

**Stop/lamella up**

**Stop/lamella down**

Parameter "Reaction on long operation"

This parameter is visible when the shutter control type is "2-push-button, standard", and it is used to set the action performed when the contact input is a long operation. Can

options:

**Move up**

**Move down**

Parameter "Reaction on operation"

This parameter is set to "2-push-button, moving[shutter]", "2-switch-operation, moving[shutter]" and

Visible when "2-push-button, stepping", set the action to be performed during the operation. Different control types perform different actions. The first two controls

The control type performs the action of moving up/down, and the latter control type performs the action of stopping the adjustment.

Options:

**Move up**

**Move down**

Options:

**Stop/lamella up**

**Stop/lamella down**

Parameter "Long operation after"

This parameter is visible when the input needs to perform a long operation, and the valid time of the contact input as a long operation is defined here. Contact input time exceeds

After the time set here, the contact input is determined as a long operation. Options: 0.3s/0.5s/.../10s

Parameter "Denounce time"

The debounce time is set here to prevent unnecessary multiple operations caused when the contact is triggered multiple times during the jitter time, that is, the minimum contact input

**Effective time. Options: 10ms/20ms/.../150ms**

## Chapter 6 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, each

The communication object and object of the channel are the same, and the function of each communication object will be introduced in detail below using channel A as an example.

## 6.1 "Manual/Automatic" communication object

Note: In the column of table properties below,

"C" represents the enablement of the communication function of the communication object;

"W" represents 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;

"U" represents that the value of the communication object can be updated.

Number	Name	Object Function	Des	Group	Adc	Length	C	R	W	T	U	Data Type	Priority
32	En/Dis Man./Auto	En/Dis Man./Auto				1 bit	C	-	W	-	-	enable	Low
33	Report Man./Auto Status	Report Man./Auto Status				1 bit	C	-	-	T	-	enable	Low

Figure 6.1 "Manual/Automatic" communication object

serial number	Function	Communication object name	type	Attributes	DPT
32	En/Dis Man./Auto	En/Dis Man./Auto	1bit	C,W	1.003 enable
This communication object is used to disable and enable the manual/automatic button. When the message "0" is received, the manual/automatic button is disabled; when the message "1" is received, the manual/automatic button is enabled.					
button.					
33	Report Man./Auto Status	Report Man./Auto Status	1bit	C,T	1.003 enable
The communication object will send a message when switching between manual operation and automatic operation, reporting the current operation status. When switching from manual operation to automatic operation, the object sends telegram "0" to the bus; when switching from automatic operation to manual operation, the object sends telegram "1" to the bus.					

Table 1 "Manual/Automatic" communication object list

## 6.2 "Jointly adjustable[Dimming]" communication object

The communication object of channel combination dimming function is shown in Figure 6.2

Number	Name	Object Function	Des	Group	Adc	Length	C	R	W	T	U	Data Type	Priority
0	Disable , A/B	CH A/B Disable				1 bit	C	-	W	-	-	enable	Low
1	Dimming , A/B	Dimming , A/B				4 bit	C	-	-	T	-	dimming control	Low
2	Switch , A/B	Switch , A/B				1 bit	C	-	-	T	-	switch	Low

Figure 6.2 "Jointly adjustable[Dimming]" communication object



## K-BUS ® KNX/EIB binary input module

numbering function	Communication object name	type	property	Attributes	DPT
0	<b>CHX/Y disable</b>	<b>CH A/B Disable</b>	<b>1 bit</b>	<b>C,W</b>	<b>1.003 enable</b>
<p>When the combined channel function is enabled, this communication object is activated to disable/enable the combined channel function. When the communication object receives a message with a logic value of "0", the Use the channel function; when receiving a "1" message, enable the channel function. When the combined channel function is not enabled, the control messages sent by all objects are invalid. Bus restoration , the combined channel function is enabled by default. (The communication object "Disable" of all combined channel functions performs the same operation)</p>					
1	<b>Dimming, X/Y</b>	<b>Dimming, A/B</b>	<b>4 bits</b>	<b>C,T</b>	<b>3.007 dimming control</b>
<p>This communication object is used to send dimming commands to control devices on the bus that can perform dimming. When the contact is closed, send "9" or "1", that is, up or down, the contact When disconnected, send "8" or "0", that is, stop up-regulation or stop down-regulation.</p>					
2	<b>Switch, X/Y</b>	<b>Switch, A/B</b>	<b>1 bit</b>	<b>C,T</b>	<b>1.001 switch</b>
<p>The communication object is used to send the switch command, when the contact is closed, send the message "0" or "1", that is to close the switch or open the switch.</p>					

Table 2 "Jointly adjustable[Dimming]" communication object table

### 6.3 "Jointly adjustable[Shutter]" communication object

The communication object of the channel combination shutter function is shown in Figure 6.3.

Number	Name	Object Function	Des	Group	Adc	Length	C	R	W	T	U	Data Type	Priority
0	Disable, A/B	CH A/B Disable				1 bit	C	-	W	-	-	enable	Low
1	Shutter move up/down, A/B	Shutter move up/down, A/B				1 bit	C	-	-	T	-	up/down	Low
2	Shutter stop, A/B	Shutter stop, A/B				1 bit	C	-	-	T	-		Low

Figure 6.3 "Jointly adjustable[Shutter]" communication object

numbering function	Communication object name	type	Attributes	DPT
1	<b>Shutter move up/down, X/Y Use this</b>	<b>CHA/B Disable</b>	<b>C,T</b>	<b>1.008 up/down</b>
<p>communication object to control the up and down movement of the blinds. When the contact is closed, send a message "1", and the blinds will move down; send a message "0", and the blinds will move up.</p>				
2	<b>Shutter stop, X/Y</b>	<b>Shutter move up/down,A/B</b>	<b>C,T</b>	<b>1.007 step</b>
<p>The adjustment of the blind is stopped via this communication object. When the contact is open, send a message "0" or "1", and the shutter stops moving.</p>				

Table 3 "Jointly adjustable[Shutter]" communication object table



## K-BUS ® KNX/EIB binary input module

### 6.4 "Switch" communication object

Number	Name	Object Function	Des	Group Ad	Length	C	R	W	T	U	Data Type	Priority
0	Disable , A	CH A Disable			1 bit	C	-	W	-	-	enable	Low
1	Switch , A	CH A Switch			1 bit	C	-	W	T	-	switch	Low
2	Switch-long , A	CH A switch-long			1 bit	C	-	-	T	-	switch	Low

Figure 6.4 "Switch" communication object

serial number	Function	Communication object name	type	Attributes	DPT
0	CH X Disable	DisableX	1bit	C,W	1.003 enable
<p>When the channel function is enabled, this communication object is activated to disable/enable the channel function. When the communication object receives a message with a logic value of "0", the channel function is disabled. Enable; when receiving a "1" message, enable the channel function. When the channel function is not enabled, the control messages sent by all objects are invalid. When bus power is restored, the channel function is disabled. It is enabled by default. (The communication object "Disable" of all channel functions performs the same operation)</p>					
1	CH X Switch	SwitchX	1bit	C,W,T	1.001 switch
<p>This communication object can be seen when the channel function "Switch" is enabled, and the switch is driven by the input value through this communication object, and corresponding actions are performed according to the parameter settings, such as ON, OFF, TOGGLE, etc. When the message is "1", the switch is on; when the message is "0", the switch is off.</p>					
2	CH X Switch-long	Switch-longX	1bit	C,T	1.001 switch
<p>The communication object in the parameter "Distinction between long and short operation" option is "yes" and the parameter "Number of objects for short/long" can be seen when the "object operation" option is "2 objects". When the input reaches a certain time, the control value is output through the communication object according to the parameter setting, and the corresponding operation is executed. actions, such as ON, OFF, TOGGLE. When the output message is "1", the switch is on; when the output message is "0", the switch is off.</p>					

Table 4 "Switch" communication object table

### 6.5 "Switch/Dimming" communication object

Number	Name	Object Function	Des	Group Ad	Length	C	R	W	T	U	Data Type	Priority
0	Disable , A	CH A Disable			1 bit	C	-	W	-	-	enable	Low
1	Switch , A	CH A Switch			1 bit	C	-	W	T	-	switch	Low
2	Dimming , A	CH A Dimming			4 bit	C	-	-	T	-	dimming control	Low

Figure 6.5 "Switch/Dimming" communication object

serial number	Function	object name	type	Attributes	DPT
1	CH X Switch	Switch, X	1bit	C,W,T	1.001 switch
<p>If the parameter "Dimming functionality" option is "Dimming and switching", the communication object is visible, and the switch is driven by the contact input value, according to Parameter setting executes corresponding actions, such as ON, OFF, TOGGLE, etc. When the message is "1", the switch is on; when the message is "0", the switch is off. (contact input for short operation)</p>					
2	CH X Dimming	Dimming, X	4 bits	C,T	3.007 dimming control
<p>The communication object sends brightening or dimming commands through contact input, and can control the dimming equipment on the bus to perform relative dimming. When the input is disconnected, the An end command to stop dimming. (When the parameter "Dimming functionality" option is "Dimming and switching", the contact input is a long operation, and the option is "only dimming", the contact input does not distinguish long/short operation)</p>					

Table 5 "Switch/Dimming" communication object table



## 6.6 "Value/force output" communication object

This function has many data types and many communication objects, which are not listed in Figure 6.6. Communication objects of these different data types

The implemented operations are all the same, and they all transmit the input object value, but the range of the transmitted object value is different. can distinguish between long/short operations, and also to not distinguish.

Number	Name	Object Function	Des	Group	Adc	Length	C	R	W	T	U	Data Type	Priority
0	Disable , A	CH A Disable				1 bit	C	-	W	-	-	enable	Low
1	Output 1bit,short/rising , A	CH A Value 1bit - sr				1 bit	C	-	-	T	-	switch	Low
2	Output 1bit,long/falling , A	CH A Value 1bit - lf				1 bit	C	-	-	T	-	switch	Low

Figure 6.6 "Value/Forced output" communication object

numbering	function	Communication object name	type	attributeDPT	
1	CH X Value...-sr Output... , short/rising	X 1bit [0/1]	1byte[-128..127] 1byte[0..255] 1byte[recall scene] 1byte[store scene] 2byte[-32768..32767] 2byte[0..65535] 2byte[Float] 3byte[time of day] 4byte[-2147483648... 2147483647] 4byte[0..4294967295]	C,T	1.001 DPT_Switch 6.010 DPT_Value_1_Count 5.010 DPT_Value_1_Ucount 18.001 DPT_SceneControl 18.001 DPT_SceneControl 8.001 DPT_Value_2_Count 7.001 DPT_Value_2_Ucount 9.001 DPT_Value_Temp 10.001 DPT_TimeOfDay 13.001 DPT_Value_4_Count 12.001 DPT_Value_4_Ucount
<p>This communication object is used to send the contact input value. If long/short operation is distinguished, then the contact input value during short operation is sent; if long/short operation is not distinguished, it is sent Contact input value on rising edge. The value range that can be sent by the communication object is determined by the data type, and the data type is determined by the parameter "Reaction on operation/rising edge" set up.</p>					
2	CH X Value...-lf Output... , long/falling	X 1bit [0/1]	1byte[-128..127] 1byte[0..255] 1byte[recall scene] 1byte[store scene] 2byte[-32768..32767]	C,T	1.001 DPT_Switch 6.010 DPT_Value_1_Count 5.010 DPT_Value_1_Ucount 17.001 DPT_SceneControl 18.001 DPT_SceneControl 8.001 DPT_Value_2_Count



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			2byte[0..65535]		7.001 DPT_Value_2_Ucount
			2byte[Float]		9.001 DPT_Value_Temp
			3byte[time of day]		10.001 DPT_TimeOfDay
			4byte[-2147483648... 2147483647]		13.001 DPT_Value_4_Count
			4byte[0..4294967295]		12.001 DPT_Value_4_Ucount
<p>This communication object is used to send the contact input value. If long/short operation is distinguished, then the contact input value during long operation is sent; if long/short operation is not distinguished, it is sent Contact input value at falling edge. The range of values that can be sent by the communication object is determined by the data type, and the data type is determined by the parameter "Reaction on long operation/falling edge" setting.</p>					

Table 6 "Value/Forced output" communication object table

## 6.7 "Scene control" communication object

Scene control communication objects are shown in Figure 6.7, which can be controlled by up to 6 independent objects and have three data types.

Number	Name	Object Function	Des	Group Adc	Length	C	R	W	T	U	Data Type	Priority
0	Disable , A	CH A Disable			1 bit	C	-	W	-	-	enable	Low
1	Store scene , A	CH A Store scene			1 bit	C	-	W	T	-	boolean	Low
2	Output 1bit,Group-A , A	CH A 1bit,Group-A			1 bit	C	-	W	T	U	switch	Low
3	Output 1bit,Group-B , A	CH A 1bit,Group-B			1 bit	C	-	W	T	U	switch	Low
4	Output 1bit,Group-C , A	CH A 1bit,Group-C			1 bit	C	-	W	T	U	switch	Low
5	Output 1bit,Group-D , A	CH A 1bit,Group-D			1 bit	C	-	W	T	U	switch	Low
6	Output 1bit,Group-E , A	CH A 1bit,Group-E			1 bit	C	-	W	T	U	switch	Low
7	Output 1bit,Group-F , A	CH A 1bit,Group-F			1 bit	C	-	W	T	U	switch	Low

Figure 6.7 "Scene control" communication object

serial number	Function	Communication object name	type	Attributes	DPT
1	CH X Store scene	Store scene, X	1Bit	C,W,T	1.002 boolean
<p>The communication object triggers the storage of the scene or instructs the storage of the scene through the bus. The specific storage process is determined by the storage method of the scene.</p> <p>A detailed description.</p>					
2-7	CH X 1bit/1byte/2byte, Group-A...F	Output 1bit/1byte/2byte, Group-A...FyX	1bit[ON/OFF] 1byte[0..100%] 1byte[0..255] 2byte[Float]	C,W,T,U	1.001 DPT_Switch 5.001 DPT_Scaling 5.010 DPT_Value_1_Ucount 9.001 DPT_Value_Temp
<p>This communication object is used to control the actuator group, which can be controlled by 1-bit, 8-bit or 16-bit data (parameter setting). When saving the scene, the value of this object is passed through the bus read, modify and store. When the bus is powered on and reset, the object value restores the parameter setting value, and the saved new value is lost.</p>					

Table 7 "Scene control" communication object table



## K-BUS ® KNX/EIB binary input module

### 6.8 "Switch sequence" communication object

The switch sequence communication object is shown in Figure 6.8, and the value of the object can be modified step by step through one operation. Each object corresponds to a switch

class.

Number	Name	Object Function	Des	Group Adc	Length	C	R	W	T	U	Data Type	Priority
0	Disable , A	CH A Disable			1 bit	C	-	W	-	-	enable	Low
1	Output level-1 , A	CH A level-1			1 bit	C	-	-	T	-	switch	Low
2	Output level-2 , A	CH A level-2			1 bit	C	-	-	T	-	switch	Low
3	Output level-3 , A	CH A level-3			1 bit	C	-	-	T	-	switch	Low
4	Output level-4 , A	CH A level-4			1 bit	C	-	-	T	-	switch	Low
5	Output level-5 , A	CH A level-5			1 bit	C	-	-	T	-	switch	Low
6	Level increment/decrement , A	CH A Level increment/decrement			1 bit	C	-	W	-	-		Low

Figure 6.8 "Switching sequence" communication object

serial number	Function	Communication object name	type of data	Attributes	DPT
1-5	CH X level-1(1-5)	Output level-1(1-5), X	1bit	C,T	1.001 switch
<p>The number of communication objects here (up to 5 communication objects), that is, the number of switch stages, is set by the parameter "No. of object". Here send to the communication object on the bus</p> <p>It is the communication object whose object value has been modified, that is, the communication object whose data value has changed. The specific process is described in the chapter of switch sequence parameter setting.</p>					
6	CH X Level increment/decrement	Level increment/decrement, X	1bit	C,W	1.007 step
<p>Communication object "level increment/decrement" . X" is used to realize the switch level up and down. Sending "1" means going up one level; sending "0" means going down one level.</p> <p>The specific process is described in the chapter of switch sequence parameter setting.</p>					

Table 8 "Switching sequence" communication object table

### 6.9 "Counter" communication object

The communication objects of the counting function are shown in Figure 6.9, including the communication objects of standard counting and differential counting, both of which communicate simultaneously.

Over-pulse trigger counting, standard counting and differential counting are independent of each other, and different data types can be set respectively.

Number	Name	Object Function	Des	Group Adc	Length	C	R	W	T	U	Data Type	Priority
0	Disable , A	CH A Disable			1 bit	C	-	W	-	-	enable	Low
1	MCounter:Counter value , A	CH A Counter value			2 bytes	C	-	-	T	-	pulses difference	Low
2	DCounter:Counter value , A	CH A DCounter value			2 bytes	C	-	-	T	-	pulses difference	Low
3	DCounter:Limit exceeded , A	CH A DCounter:Limit exceeded			1 bit	C	-	-	T	-		Low
4	DCounter:Reset value , A	CH A DCounter:Reset value			1 bit	C	-	W	-	-		Low
5	DCounter:Stop , A	CH A DCounter:Stop			1 bit	C	-	W	T	-	start/stop	Low
6	MCounter:Limit exceeded , A	CH A MCounter:Limit exceeded			1 bit	C	-	-	T	-		Low
7	Request counter value , A	CH A Request counter value			1 bit	C	-	W	-	-	enable	Low

Figure 6.9 "Counter" communication object



## K-BUS ® KNX/EIB binary input module

serial number	Function	Communication object name	type	Attributes	DPT
1	<b>CH X Counter value MCounter:</b>	<b>Counter value, X</b>	1byte[0..255] 2byte[-32768..32767] 2byte[0..65535] 4byte[-2147470000..2147470000]	C,T	5.010 DPT_Value_1_Ucount 8.001 DPT_Value_2_Count 7.001 DPT_Value_2_Ucount 13.001 DPT_Value_4_Count
This communication object is used to transmit the current count value of the standard count. Different data types have different counting ranges, determined by the parameter "Date width of counter" Decide.					
2	<b>CH X DCounter value</b>	<b>DCounter: Counter value, X</b>	1byte[0..255] 2byte[-32768..32767] 2byte[0..65535] 4byte[-2147470000..2147470000]	C,T	5.010 DPT_Value_1_Ucount 8.001 DPT_Value_2_Count 7.001 DPT_Value_2_Ucount 13.001 DPT_Value_4_Count
This communication object is used to transmit the current counting value of differential counting. Different data types have different counting ranges, determined by the parameter "Date width" in differential counting of counter" decision.					
3	<b>CH X DCounter Limit exceeded</b>	<b>DCounter Limit exceeded, X</b>	1bit	C,T	1.005 alarm
When the differential count exceeds the limit, the communication object sends a message "1" to report the count overflow.					
4	<b>CH X DCounter Reset value</b>	<b>DCounter Reset value X</b>	1bit C,W		1.015 reset
This communication object is used to reset the count value of the differential counter. When the object receives the message "1", the current count value is reset to the count initial value.					
5	<b>CH X DCounter Stop</b>	<b>DCounter Stop, X</b>	1bit C,W,T		1.010 start/stop
This communication object is used to report counting stop when the differential count overflows, and the object sends a message '0' (according to the parameter setting); at the same time, the differential counter can also pass The object receives a message '0' to stop counting, and receives a message '1' to continue counting.					
6	<b>CH X MCounter Limit exceeded</b>	<b>MCounter Limit exceeded, X</b>	1bit	C, T	1.005 alarm
When the standard count exceeds the limit, the communication object sends a telegram "1" to report count overflow.					
7	<b>CH X Request Counter value</b>	<b>Request Counter value, A</b>	1bit C,W		1.003 enable
When the communication object receives the message "1", the object "MCounter: Counter value, X" and the object "DCounter: Counter value, X" will both The count value is sent on the bus.					

Table 9 "Counter" communication object table





## K-BUS ® KNX/EIB binary input module

### 6.10 "Multiple operation" communication object

The multi-operation communication object is shown in Figure 6.10. If multiple inputs are detected within a certain period of time, the value of the specified operation object can be changed.

Number	Name	Object Function	Des	Group Adc	Length	C	R	W	T	U	Data Type	Priority
0	Disable , A	CH A Disable			1 bit	C	-	W	-	-	enable	Low
1	Output 1-fold , A	CH A 1-fold			1 bit	C	-	-	T	-	switch	Low
2	Output 2-fold , A	CH A 2-fold			1 bit	C	-	-	T	-	switch	Low
3	Output 3-fold , A	CH A 3-fold			1 bit	C	-	-	T	-	switch	Low
4	Output 4-fold , A	CH A 4-fold			1 bit	C	-	-	T	-	switch	Low
5	Output Long-fold , A	CH A Long-fold			1 bit	C	-	-	T	-	switch	Low

Figure 6.10 "Multiple operation" communication object

serial number	Function	Communication object name	type	Attributes	DPT
1-4	CH X 1-fold(1-4)	Output 1-fold, X(1-4)	1Bit	C,T	1.001 switch
<p>The number of communication objects here (up to 4 communication objects) is set by the parameter "Max. number of operations(=Num. of objects)". When there are multiple operations</p> <p>When input, multiple communication objects send corresponding messages to the bus, and the messages are set by the parameter "value send (object "Tele. Operation ... -fold)". The specific process of the object is in</p> <p>Multiple operation parameter settings are described in chapter.</p>					
5	CH X Long-fold	Output Long-fold, X	1Bit	C,T	1.001 switch
<p>This communication object is visible when the parameter "Additional object for long operation" option is "yes". Once a long operation is detected, the object sends a message to the bus.</p> <p>The telegram sent is set by the parameter "value send (object "Tele. Long operation)".</p>					

Table 10 "Multiple operation" communication object table



## 6.11 "Shutter control" communication object

The shutter control communication object is shown in Figure 6.11.

Number	Name	Object Function	Des	Group Adc	Length	C	R	W	T	U	Data Type	Priority
0	Disable , A	CH A Disable			1 bit	C	-	W	-	-	enable	Low
1	Output shutter UP/DOWN , A	CH A shutter UP/DOWN			1 bit	C	-	-	T	-	up/down	Low
2	Output Stop/lamella adj , A	CH A Stop/lamella adj			1 bit	C	-	-	T	-		Low
3	Upper limit position , A	CH A Upper limit position			1 bit	C	-	W	-	-	enable	Low
4	Lower limit position , A	CH A Lower limit position			1 bit	C	-	W	-	-	enable	Low

Figure 6.11 "Shutter Control" communication object

serial number	Function	Communication object name	data type property		DPT
1	CH X shutter UP/DOWN Output shutter UP/DOWN, X		1Bit	C,T	1.008 up/down
<p>The communication object sends commands through the bus to move the curtain up/down. When the communication object sends a "1" message, it moves down; when it sends a "0" message, it moves up.</p>					
2	CH X Stop/lamella adj	Output Stop/lamella adj, X	1Bit	C,T	1.007 step
<p>The communication object sends commands through the bus to stop/adjust the curtains. When the communication object sends a "1" message, it stops/adjusts downward; when it sends a "0" message, it stops/up Adjustment.</p>					
3	CH X Upper limit position	Upper limit position, X	1Bit	C,W	1.003 enable
<p>This communication object is used to limit the upward movement of the curtain. When the communication object receives a message with a logic value of "1", it will limit the upward movement; when it receives a message with a logic value of "0", , cancel the restriction.</p>					
4	CH X Lower limit position	Lower limit position, X	1Bit	C,W	1.003 enable
<p>This communication object is used to limit the downward movement of the curtain. When the communication object receives a message with a logic value of "1", it restricts the downward movement; when it receives a message with a logic value of "0", , cancel the restriction.</p>					

Table 11 "Shutter Control" communication object table