

# HDL KNX / EIB-BUS

(Intelligent Installation Systems)

## Product Manual

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## 1- Product introduction

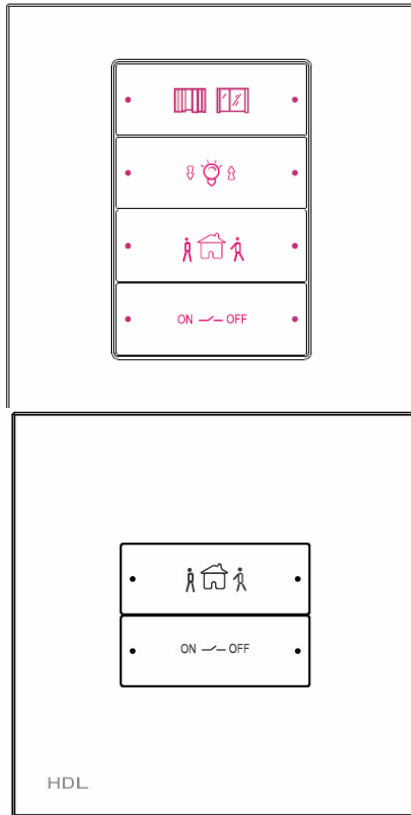
HDL KNX / EIB series Panel controller are developed by HDL. Using KNX/EIB BUS Communication with other KNX devices. Database need to be downloaded to the Panel controller by using the ETS2 V1.3(\*.vd2)/ETS 3.0(\*.vd3). The document describes how to use the products. Our products use standard according to EMC, electrical safety, environmental conditions. This product has the accept function of infrared remote control. So, Through infrared remote control can be reach the aim of control directly.

The panels are can be use as:

- \* **Switch**
- \* **Dimmer**
- \* **Shutter**
- \* .....
- \* **Other Controlled equipments**

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## 1.1-Product Function



**M/P02.1**

For M/P04.1 and the M/P02.1 require. The following functions can be set individually for each control channel:

- \* Switch controller
- \* Dimming controller
- \* Shutter controller
- \* Flexible controller
- \* Scene controller
- \* Percentage controller
- \* Combination controller
- \* 14 bytes value controller

### **Additional functions as following:**

- \* IR Remote control
- \* Dimming LED brightness
- \* Dimming LED background light brightness
- \* Night mode(automatic darker after a delay)
- \* Infrared remote control
- \* Lock buttons via KNX/EIB BUS
- \* Trigger buttons via KNX/EIB BUS

## 2- Hardware

The technical properties of HDL KNX/EIB Panel controller as the following sections.

### 2.1 Technical data

#### Panel type and buttons

* Type of Device	M/P02.1	M/P04.1
* Number of button	2	4

#### Power supply

* Operating voltage (supply by the bus)	21...30 V DC,
* Current consumption EIB / KNX (operate)	< 25 mA
* Current consumption EIB / KNX (standby)	< 5 mA

#### Connections

* EIB / KNX	Bus Connection Terminal 0.8 mm Ø, single core
* Load circuits	Screw terminal with Slotted head 0.2...4 mm <sup>2</sup> multi- core 0.4...6 mm <sup>2</sup> single-core
* cable shoe	12 mm
* Tightening torque	Max. 0.8 Nm

#### Operating and display

* Push Diagonal combination button	Programming mode eg: M/P04.1: button left of rocker A and button right of rocker D M/P02.1: button left of rocker A and button right of rocker B
* Backlight led go round	For assignment of the physical address

#### Temperature range

* Operation	- 5 °C ~ + 45 °C
* Storage	- 25 °C ~ + 55 °C
* Transport	- 25 °C ~ + 70 °C

#### Environment conditions

* humidity	max. 95 % Non-condensing
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#### Appearance design

* Type-M/P	02.1	04.1
* Dimensions (H x W x D)	86 x 86 x35	86 x 86 x35

#### Weight (unit kg)

0.26	0.26
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#### Installation

Standard GI Box 86x86

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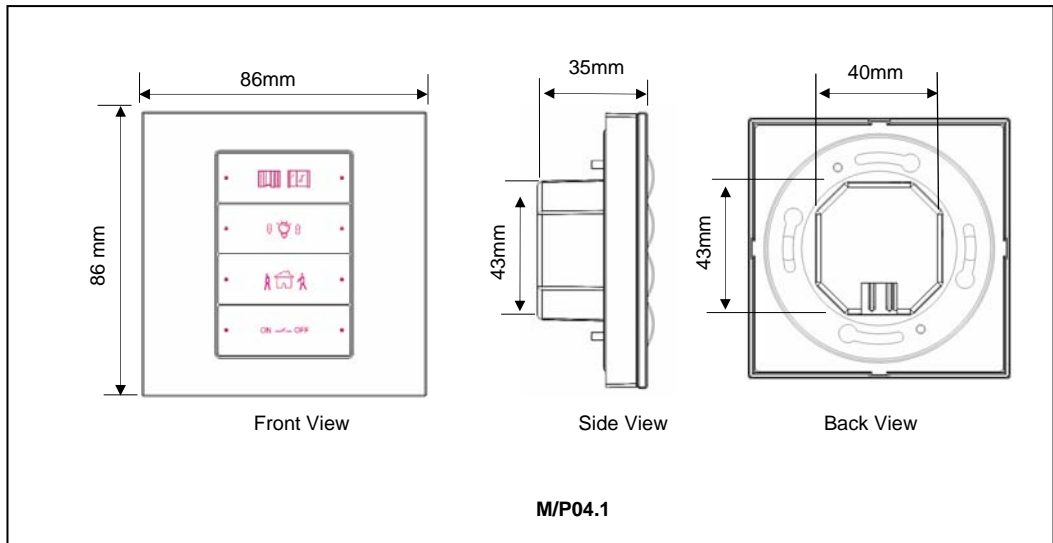
<b>Mounting position</b>	The wall
<b>Material and Colour</b>	Glass and plastic, Black
<b>Standard and Safety</b>	Certificated
* LVD Standard	EN60669-2-1 , EN60669-1
* EMC Standard	EN50090-2-2
<b>CE mark</b>	
* In accordance with the EMC guideline and low voltage guideline	
<b>Pollutant</b>	Comply with RoHS

## Application table

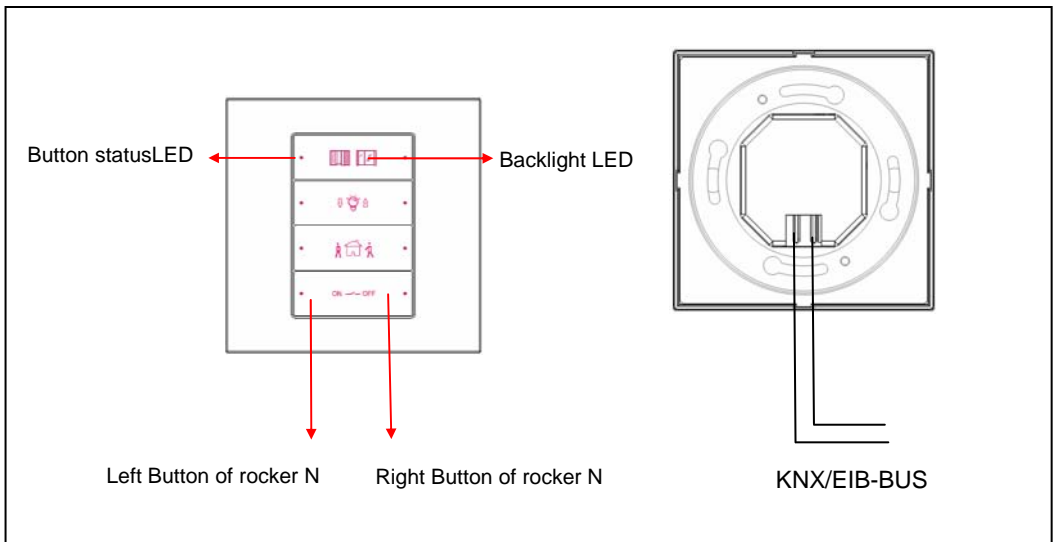
Type	M/P02.1	M/P04.1
<b>Max. number of communication objects</b>	130	230
<b>Max. number of group addresses</b>	254	254
<b>Max. number of associations</b>	254	254

Note: The programming requires the EIB Software Tools ETS2 V1.3 or ETS3.0. If use ETS2 V1.3, then import "\*.vd2". If use ETS3.0, then Import "\*.vd3"

2.2 Dimension drawings



2.3 Wiring diagram



N=A,B,C,D: Order from top to bottom

2.4 Maintenance and Cautions

- \*Please read this user manual carefully before any operation.
- \*Don't close to the interfering devices.
- \*The site should be ventilated with good cooling environment.
- \*Pay attention to damp proof, quakeproof and dustproof.
- \*Avoid rain, other liquids or caustic gas.
- \*Please contact professional maintenance staff or HDL service center for repair or fix.

- \*Remove the dust regularly and do not wipe the unit with the volatile liquids like alcohol, gasoline, etc.
- \*If damaged by damp or liquid, turn off it immediately.
- \*Regularly check the circuitry and other related circuit or cables and replace the disqualified circuitry on time.
- \*For security, each circuit to connect an MCB or fuse
- \*Installation location should be well-ventilated, pay attention to moisture, shock, dust proof.



### 3- Software

HDL KNX/EIB Panel Actuators database use ETS3.0 to do the design. The device types are M/P02.1 and M/P04.1. All Interface and the functions Apply parameters please overview the following description of the paragraph.

#### 3.1 Function parameter “General”

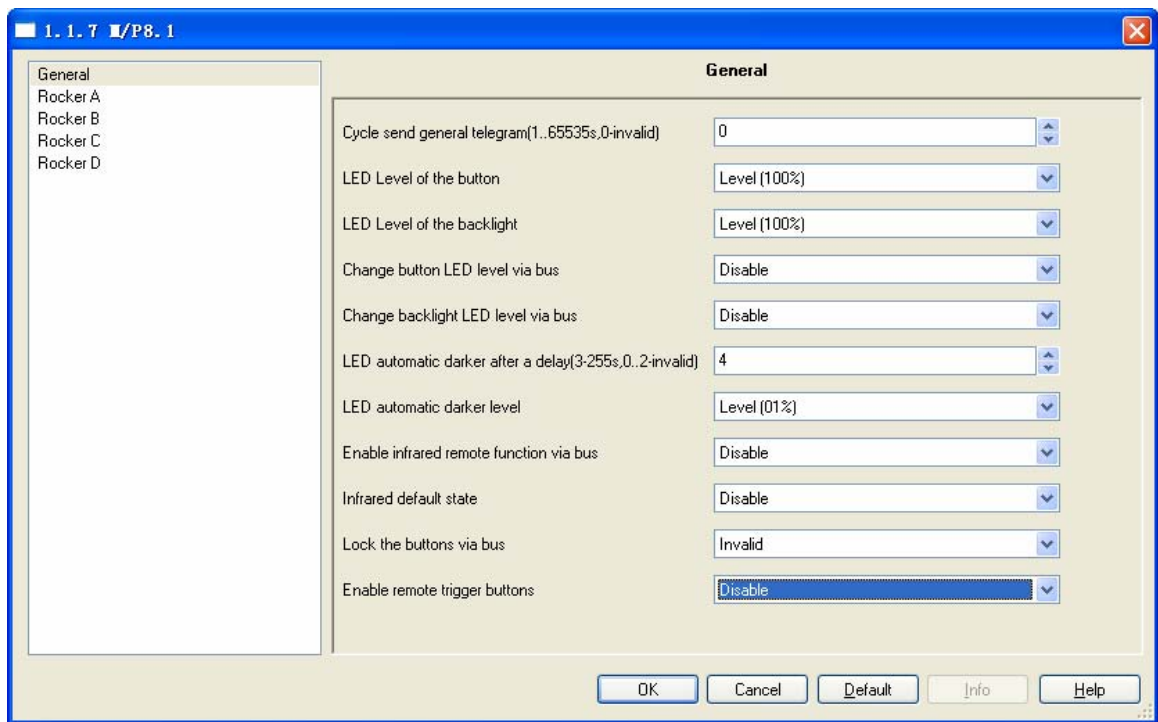


Fig1: “General” parameter windows

In the parameter of the general windows can set 11 parameters.

**---Cycle send general telegram(1..65535s,0-invalid)**

The range of the parameter is 0 to 65535s. Zero of parameter disable the function , other of parameter enable this function

**Options:** 0...65535s

The parameter set to nonzero, Device will send a telegram data cyclically when time out. Send the value alternately between 0 and 1.

**---LED Level of the button**

Set the LED level of the button.

The LED level setting range is 00% ... Level100%

**Options:** Level 00%...Level100%

### ---LED Level of the backlight

Set the LED level of the backlight.

The LED brightness of the backlight setting range is 00% ... Level100%

**Options:** Level 00%...Level100%

### ---Change button LED level via bus

If choose the Enable, other devices on the bus can send telegram to change the LED brightness of the button.

If you choose the Disable, the LED brightness of the button can't change by other KNX/EIB devices.

**Options:** Disable  
Enable

### ---Change backlight LED level via bus

If choose the Enable, other devices on the bus can send telegram to change the backlight LED brightness of the rocker.

If you choose the Disable, the backlight LED brightness of the button can't change by other devices.

**Options:** Disable  
Enable

### ---LED automatic darker after a delay (3-255s, 0-2invalid)

If the value set between 0 to 2, The function is invalid. Otherwise, the function is valid. If valid, and when push the button, the button LED brightness and backlight LED brightness change to max level. When time out, the LED will automatic darker to the set level, eg: 1%. So, the function is very useful in the evening and energy.

**Options:** 0-255s

**0-2s:** Invalid

**3-255s:** valid

### ---LED automatic darker level

Set the darker level when LED automatic darker.

**Options:** 0%-100%

### ---Enable infrared remote function via bus

If set to Enable, infrared remote will be enable controlled by IR remote controller

**Options:** Disable  
Enable

Disable: disable infrared function.

Enable: Enable infrared function.

### ---Infrared default state

Options: Disable

Enable

### ---Lock the buttons via bus

The button can be locked via bus, if it receives the telegram value 0, the button is locked, if it receives the telegram value 1, the button is unlocked. If the button is locked, the button is invalid and cannot be operated.

Options: invalid

Lock together

Single lock

Lock with together or single

Lock together: All buttons locked together.

Single lock: Can lock one of the buttons.

### ---Enable remote trigger buttons

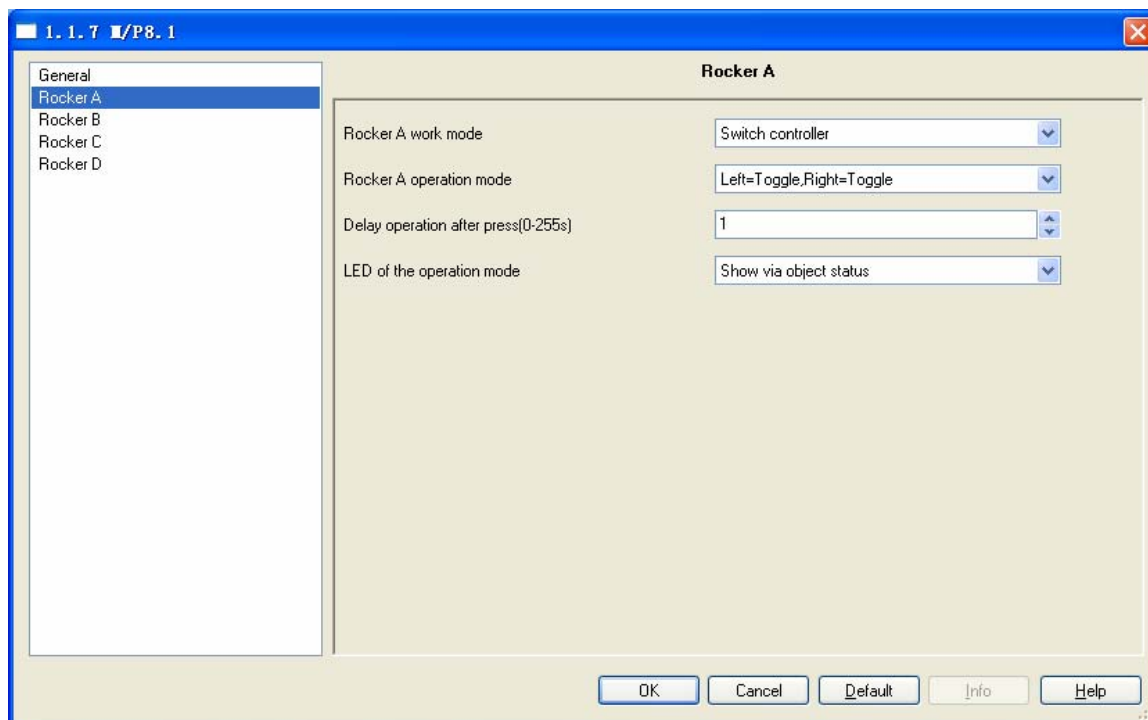
If set to enable, the buttons may be triggered through remote objects which send a telegram to EIB, if it receives the value "1" then triggered, otherwise not triggered.

It is only possible to get a short operation when using the remote trigger button objects, long operation is impossible.

Options: Disable

Enable

### 3.2 Function parameter Rocker “N”



**Fig2:** “Rocker N” parameter(N=A,B,C,D) windows

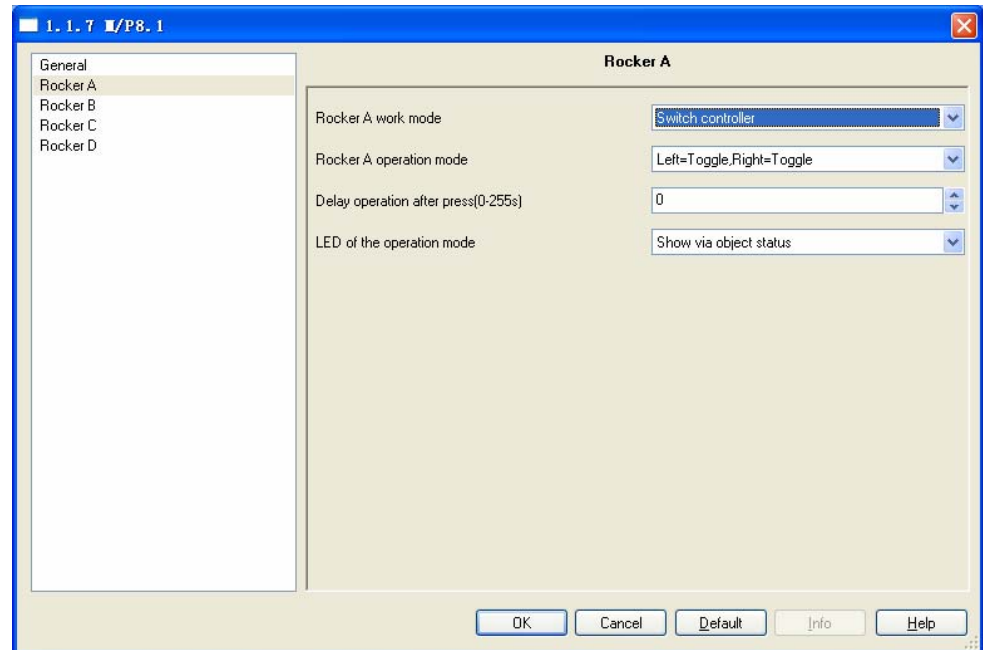
In the parameter windows of the “Rocker N”, can setup some common functions. Through functional selection and download the database to the device, and device will work in accordance with the selected function.

**---Rocker “N (N=A,B,C...)”work mode:**

The function of the Rocker “N” work mode can be selected with the following parameter.

- Options:
- \* Switch controller
  - \* Dimming controller
  - \* Shutter controller
  - \* Flexible controller
  - \* Scene controller
  - \* Sequence controller
  - \* Percentage controller
  - \* Combination controller
  - \* 14 bytes value controller

### 3.3.1 Button mode “Switch controller”



**Fig3:** Switch controller setup windows

#### ---Rocker A operation mode

This parameter determine the work mode of the rocker A

Options: Left=toggle, Right=toggle  
 Left=ON, Right=OFF  
 Left=OFF, Right=ON

**Left=toggle, Right=toggle:** Left and right are all toggles.

**Left=ON, Right=OFF:** left button is on, right button is off.

**Left=OFF, Right=ON:** left button is off, right button is on.

#### ---Delay operation after press (0-255S)

Set the delay time after press short button. The delay time range is 0-255S.

Options: **0-255S**

#### ---LED of the operation mode

Set LED of the operation mode.

Options: Show via object status  
 Always on  
 Always off

Show via object status: the LED's status shows object's status.

Always on: the LED is always on.

Always off: the LED is always off.

3.3.2 Button mode “Dimming controller”

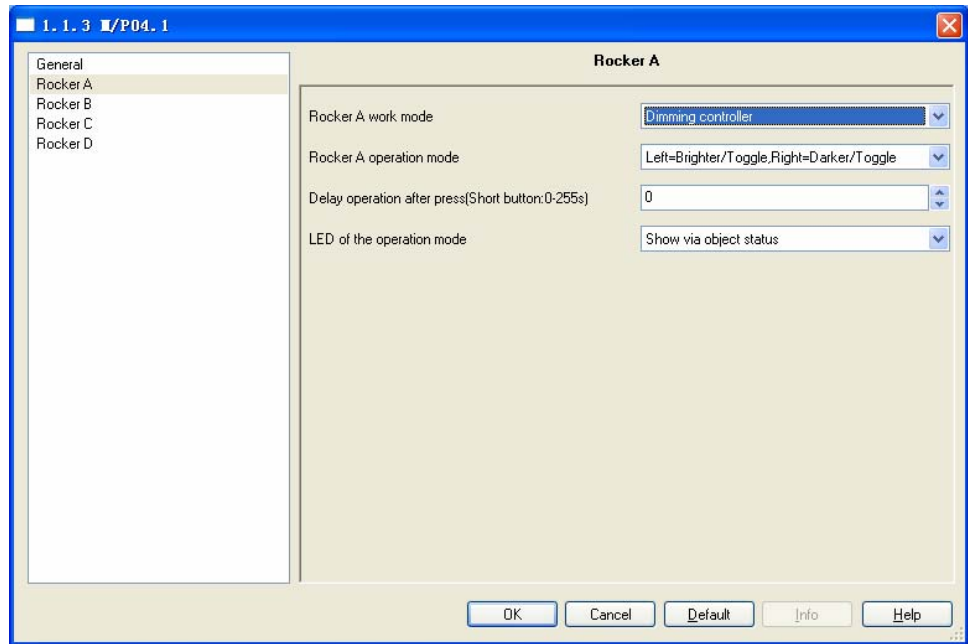


Fig.4: Dimming controller window

**---Rocker A operation mode**

Set to the button’s functions

Options: Left= Brighter/Toggle, Right=Darker/Toggle

Left= Darker/Toggle, Right= Brighter/Toggle

Left= Brighter /ON, Right= Darker/OFF

Left= Brighter /OFF, Right= Darker /ON

Left= Darker /ON, Right= Brighter /OFF

Left= Darker/OFF, Right=Brighter /ON

**Left= Brighter/Toggle, Right=Darker/Toggle:**

left button: press to switch on/off, long press to increase light brightness.

right button: press to switch on/off, long press to decrease light brightness.

**Left= Darker/Toggle, Right= Brighter/Toggle**

left button: press to switch on/off, long press to decrease light brightness

right button: press to switch on/off, long press to increase light brightness.

**Left= Brighter /ON, Right= Darker/OFF**

left button: press to switch on, long press to increase light brightness.

right button: press to switch off, long press to decrease light brightness

**Left= Brighter /OFF, Right= Darker /ON**

left button: press to switch off, long press to increase light brightness.

right button: press to switch on, long press to decrease light brightness

**Left= Darker /ON, Right= Brighter /OFF**

left button: press to switch on, long press to decrease light brightness

right button: press to switch off, long press to increase light brightness.

Left= Darker/OFF, Right=Brighter /ON

left button: press to switch off, long press to decrease light brightness

right button: press to switch on, long press to increase light brightness.

### ---Delay operation after press (0-255S)

Set the delay time after press short button. The delay time range is 0-255S.

Options: 0-255S

### ---LED of the operation mode

Set LED of the operation mode.

Options: Show via object status

Always on

Always off

Show via object status: the LED's status shows object's status.

Always on: the LED is always on.

Always off: the LED is always off.

### 3.3.3 Button mode “Shutter controller”

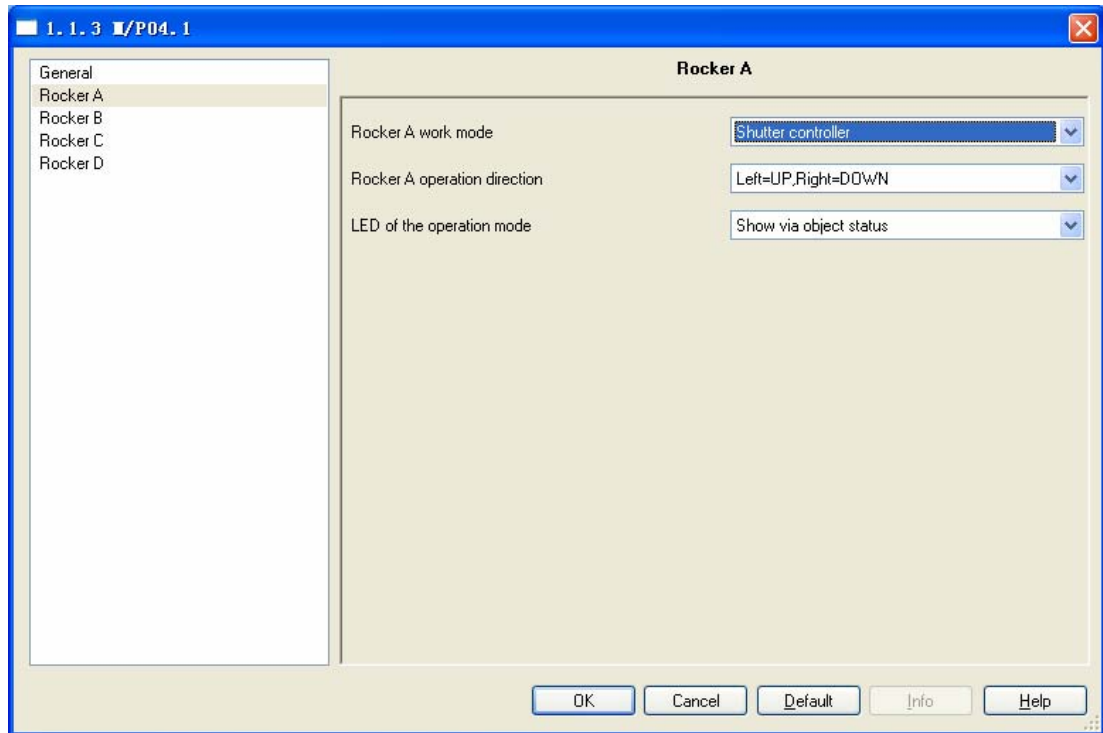


Fig5: Shutter controller window

#### ---Rocker A operation direction

Options: Left=UP, Right=DOWN

Left= DOWN, Right= UP

Left=UP, Right=DOWN:

left short button: Adjust OPEN for shutter,value is “0”

left long button: Move UP for shutter,value is “0”

right short button: Adjust CLOSE for shutter,value is “1”

right long button: Move DOWN for shutter,value is “1”

Left= DOWN, Right= UP:

left short button: Adjust CLOSE for shutter,value is “1”

left long button: Move DOWN for shutter,value is “1”

right short button: Adjust OPEN for shutter,value is “0”

right long button: Move UP for shutter,value is “0”

#### ---LED of the operation mode

Set LED of the operation mode.

Options: Show via object status

Always on

Always off

Show via object status: the LED's status shows object's status.

Always on: the LED is always on.



Always off: the LED is always off.

### 3.3.4 Button mode “Flexible controller”

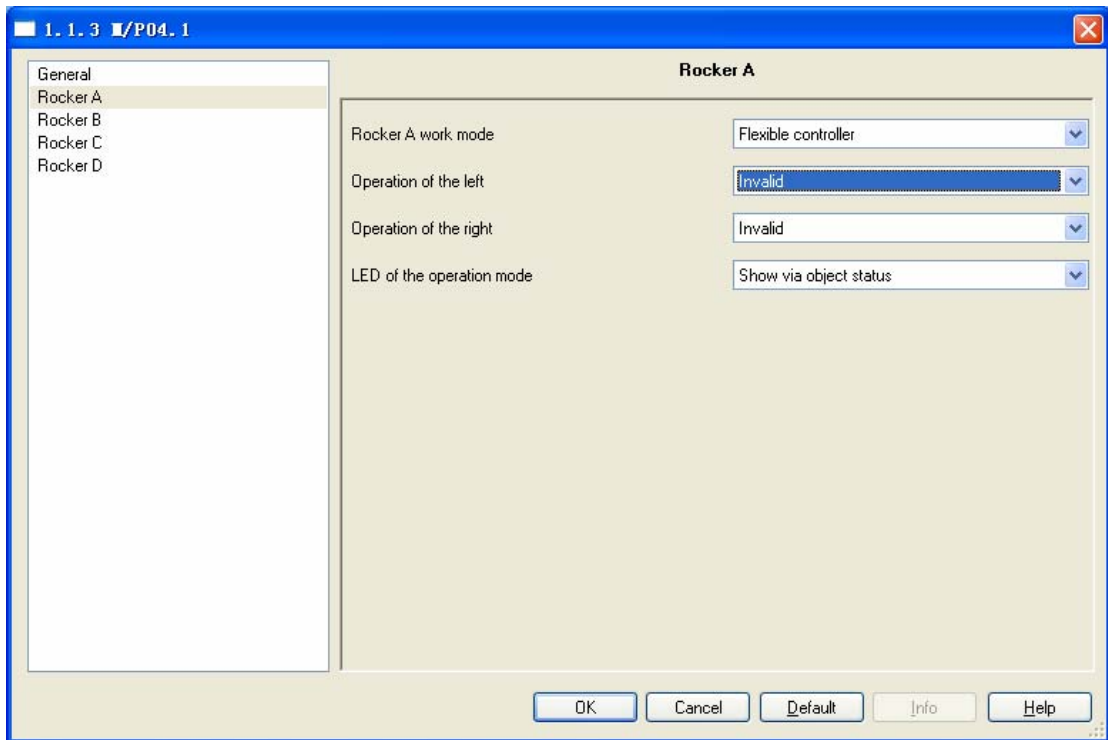


Fig6: Flexible controller window

**---Operation of the left**

**---Operation of the right**

Options: Invalid

Toggle

Press="ON"

Release="ON"

Press="ON", Release="ON"

Press="OFF"

Release="OFF"

Press=" OFF", Release=" OFF"

Press=" ON", Release=" OFF"

Press=" OFF", Release=" ON"

**---LED of the operation mode**

Set LED of the operation mode.

Options: Show via object status

Always on

Always off

Show via object status: the LED's status shows object's status.

Always on: the LED is always on.

Always off: the LED is always off.

### 3.3.5 Button mode “Scene controller”

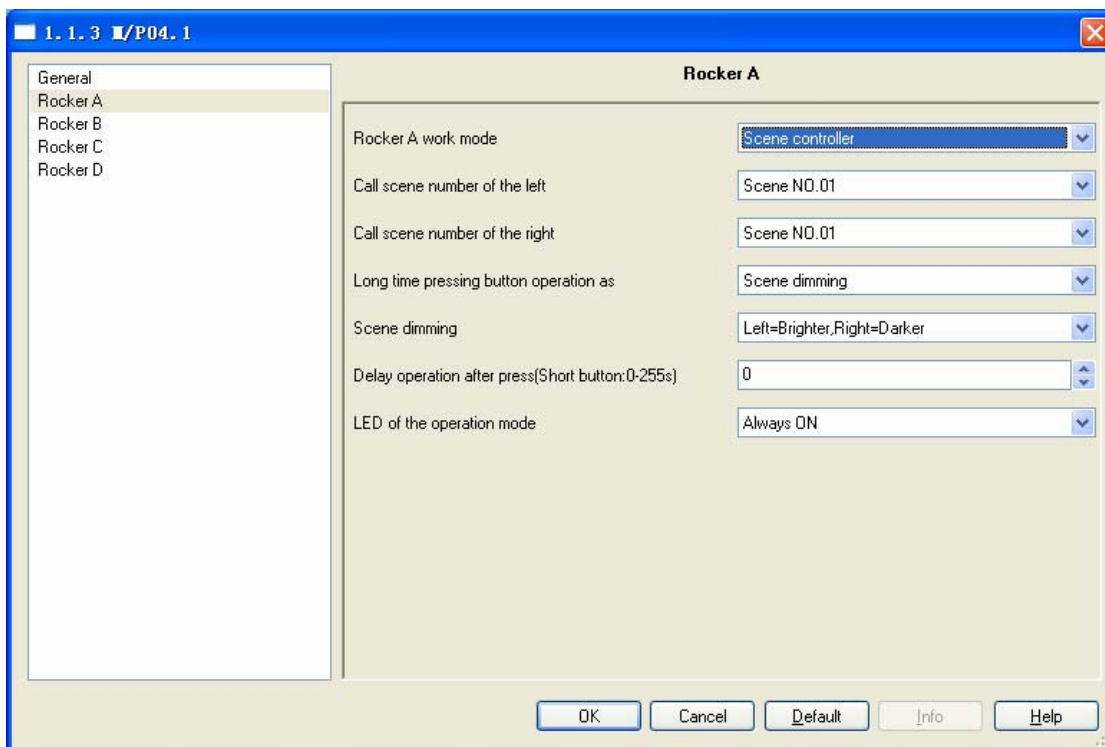


Fig7: Scene controller window

#### ---Call scene number of the left

Call the scene number of left button.

Options: Scene NO.01—Scene NO.64

#### ---Call scene number of the right

Call the scene number of right button.

Options: Scene NO.01—Scene NO.64

#### ---Long time pressing button operation as

Set the button's functions when long time press.

Options: Scene dimming

Scene saving

Dimming and Saving

#### ---Scene dimming

Options: Left=Brighter, Right=Darker

Left= Darker, Right= Brighter

Left=Brighter, Right=Darker: left button: press to decrease light brightness.

right button: press to increase light  
brightness

Left= Darker, Right= Brighter: left button: press to decrease light  
brightness.

right button: press to increase light  
brightness

### ---Scene saving

Saving the scene, and the scene number is 1..64

### ---Dimming and Saving

Dimming and saving together.

### ---Delay operation after press (0-255S)

Set the delay time after press. The delay time range is 0-255S.

Options: 0-255S

### ---LED of the operation mode

Set LED's mode.

Options: Show via object status

Always on

Always off

Show via object status: the LED's status shows the object's status.

Always on: the LED is always on.

Always off: the LED is always off.

## 3.3.6 Button mode “Sequence controller”

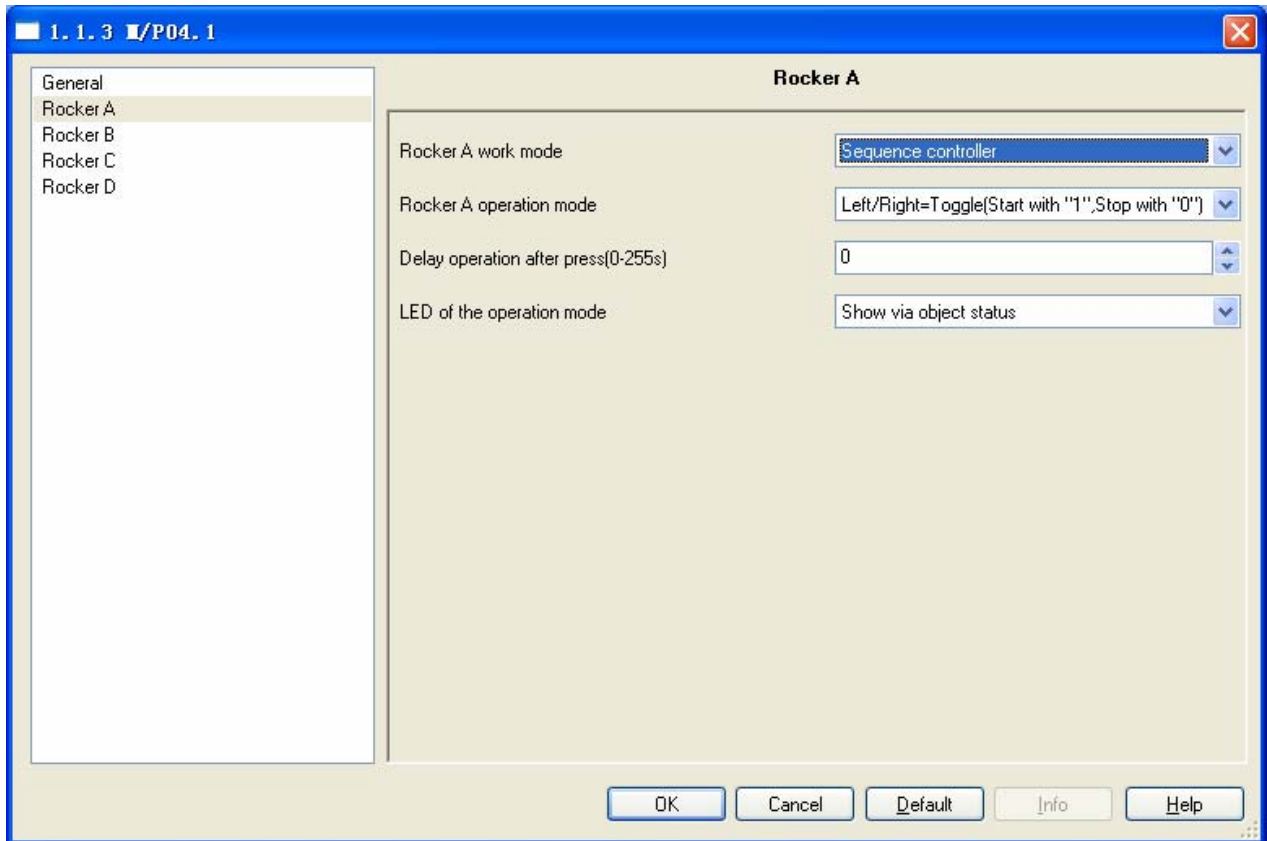


Fig8: Sequence controller window

**---Rocker A operation mode**

Options: Left/Right=Toggle (Start with “1”,Stop with “0”)

Left =Start with “1”, Right=Stop with “0”

Left = Stop with “0”, Right= Start with “1”

Left/Right=Always start with”1”

**---Delay operation after press (0-255S)**

Set the delay time after press short button. The delay time range is 0-255S.

Options: 0-255S

**---LED of the operation mode**

Set LED of the operation mode.

Options: Show via object status

Always on

Always off

Show via object status: show the object’s status.

Always on: the LED is always on.

Always off: the LED is always off.

## 3.3.7 Button mode “Percentage controller”

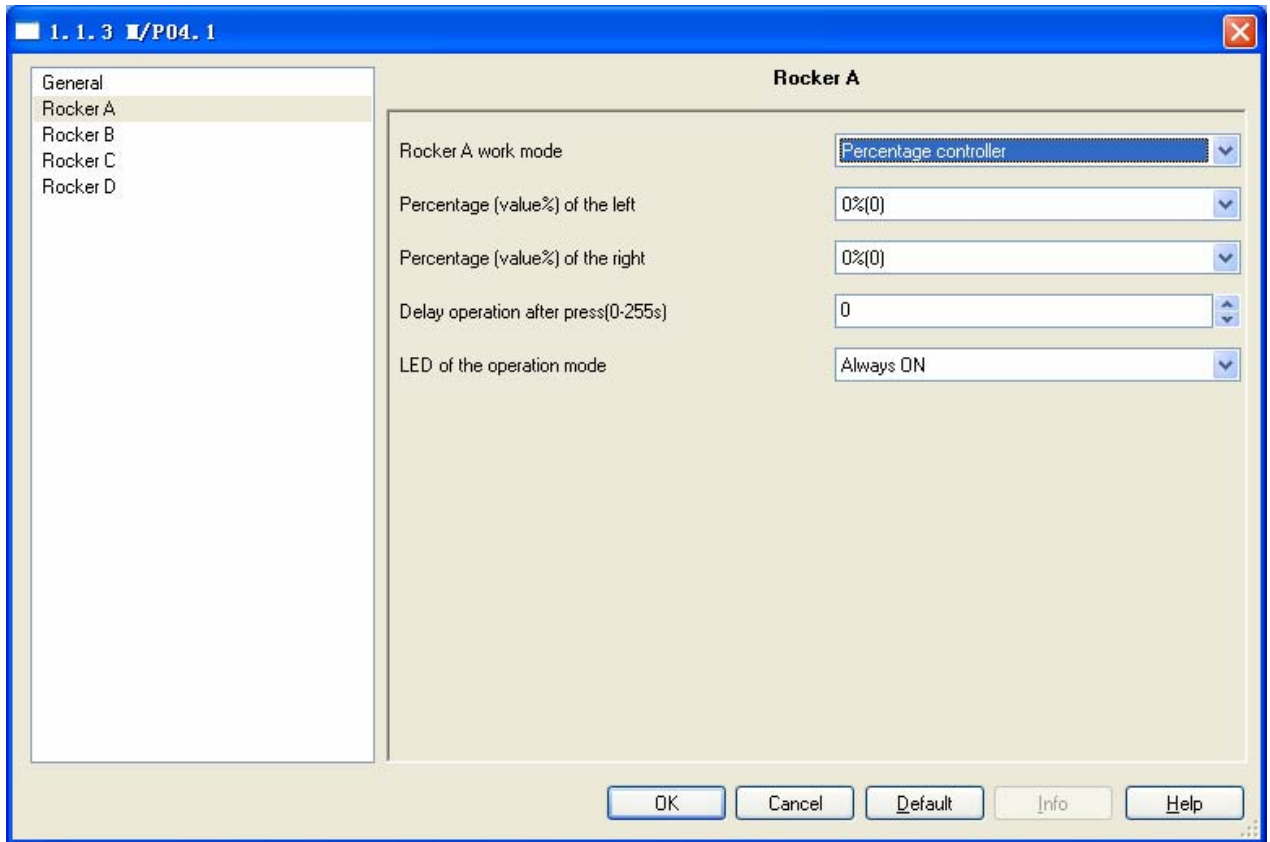


Fig9: Percentage controller window

**---Percentage (value %) of the left**

Light level setting 0%(0)—100%(255)

Options: 0%(0)—100%(255)

**---Percentage (value %) of the right**

Light level setting 0%(0)—100%(255)

Options: 0%(0)—100%(255)

**---Delay operation after press (0-255S)**

Set the delay time after press short button. The delay time range is 0-255S.

Options: 0-255S

**---LED of the operation mode**

Set LED of the operation mode.

Options: Always on

Always off

Always on: the LED is always on.

Always off: the LED is always off.

3.3.8 Button mode “Combination controller”

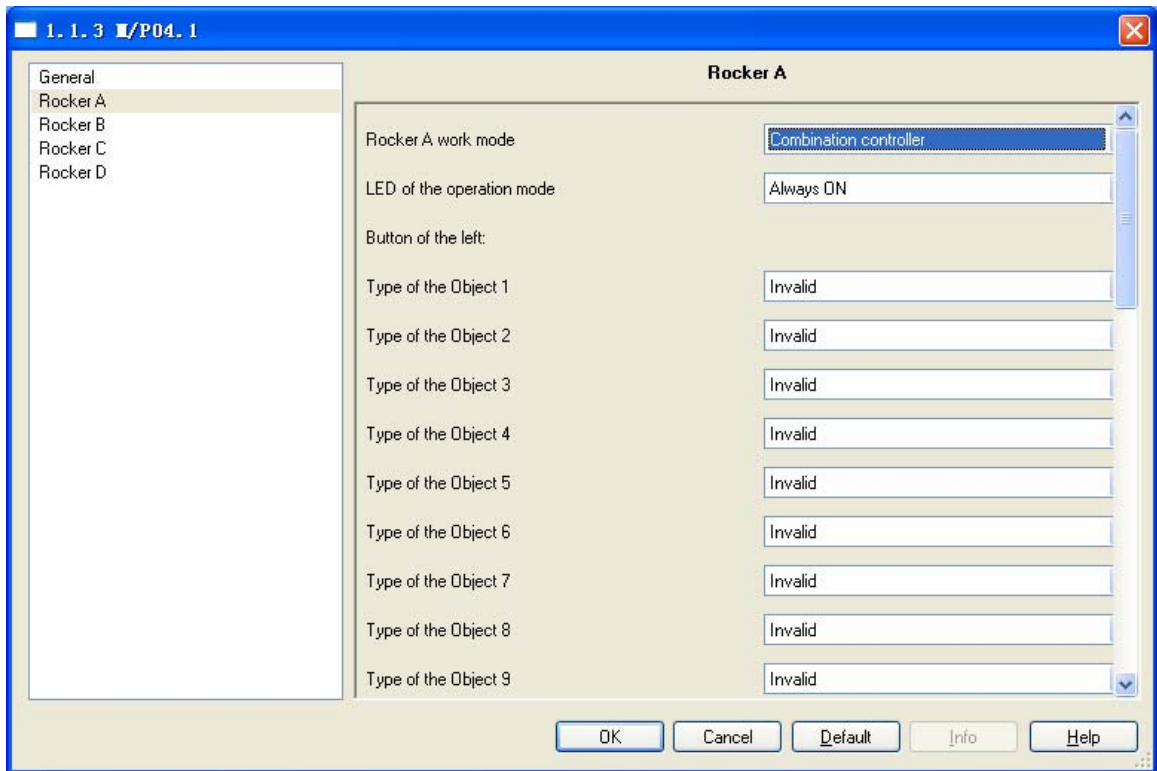


Fig10: Combination controller window

---**Button of left**

---**Button of right**

**Type of the object1...12:Invalid**

- Switch controller
- Shutter controller
- Scene controller
- Sequence controller
- Percentage controller
- 14byte value controller(string)

For left or right of button, if set some these items, and when press short button and can send Several control telegram simultaneously. Can control of multiple targets function simultaneously.

---**LED of the operation mode**

Set LED of the operation mode.

Options: Always on

Always off

Always on: the LED is always on.

Always off: the LED is always off.

Button of the left

Type of the Object 1:

### 3.3.9 Button mode “String(14 bytes) controller”

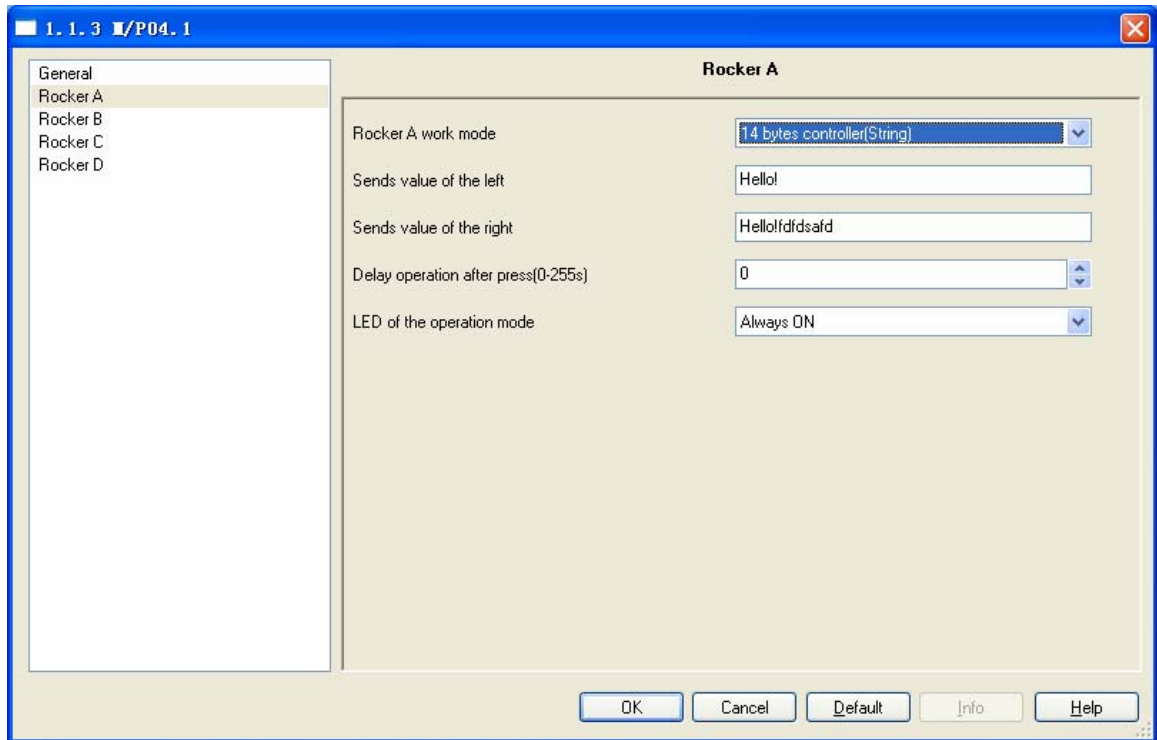


Fig11: 14 bytes value controller window

#### ---Sends value of the left

Press left button can sends the value to the bus. The value type is string.Max length is 14bytes

#### ---Delay operation after press (0-255S)

Set the delay time after press short button. The delay time range is 0-255S.  
Options: 0-255S

#### ---Sends value of the right

Press right button can sends the value to the bus. The value type is string.Max length is 14bytes

#### ---LED of the operation mode

Set LED of the operation mode.

Options: Always on  
Always off

Always on: the LED is always on.

Always off: the LED is always off.

## 4-Communication objects description

In this section will introduce the communication objects, The objects will show by setting the function enable .

**Note:** In following sections the N=A,B,C,D

### 4.1 Objects “General”

Nu...	Name	Object Function	Descript...	Group Add...	Length	C	R	W	T	U	I
0	General	Send cycles			1 bit	C	R	-	T	-	
1	General	Change button LED level			1 Byte	C	-	W	T	U	
2	General	Change backlight LED level			1 Byte	C	-	W	T	U	
3	General	Infrared remote enable			1 bit	C	-	W	T	U	
4	General	Lock button together			1 bit	C	-	W	T	U	
5	General	Lock left of Rock A			1 bit	C	-	W	T	U	
6	General	Lock right of Rock A			1 bit	C	-	W	T	U	
7	General	Lock left of Rock B			1 bit	C	-	W	T	U	
8	General	Lock right of Rock B			1 bit	C	-	W	T	U	
9	General	Lock left of Rock C			1 bit	C	-	W	T	U	
10	General	Lock right of Rock C			1 bit	C	-	W	T	U	
11	General	Lock left of Rock D			1 bit	C	-	W	T	U	
12	General	Lock right of Rock D			1 bit	C	-	W	T	U	
13	General	Trigger left of Rock A			1 bit	C	-	W	T	U	
14	General	Trigger right of Rock A			1 bit	C	-	W	T	U	
15	General	Trigger left of Rock B			1 bit	C	-	W	T	U	
16	General	Trigger right of Rock B			1 bit	C	-	W	T	U	
17	General	Trigger left of Rock C			1 bit	C	-	W	T	U	
18	General	Trigger right of Rock C			1 bit	C	-	W	T	U	
19	General	Trigger left of Rock D			1 bit	C	-	W	T	U	
20	General	Trigger right of Rock D			1 bit	C	-	W	T	U	

NO.	Object name	Function	Flags	Data type
0	General	Send cycles	C R T	DPT 1.003 1bit

This communication object is always active and valid. invert the value send telegram to bus in next frame. e.g. last telegram value is “1”, the next telegram value is “0”



NO.	Object name	Function	Flags	Data type
1	General	Change button LED level	C W T U	DPT 5.001 1byte
2	General	Change backlight LED level	C W T U	DPT 5.001 1byte

The two communication objects of the rocker N used to change LED brightness. The LED brightness will changed when objects receive the telegram value,The value range is 0%(0)..100%(255)

NO.	Object name	Function	Flags	Data type
3	General	Infrared remote enable	C W T U	DPT 1.003 1bit

This communication object used to enable or disable the infrared function.if receive the value “1”,and the infrared function is enabled,if receive the value “0”,and the infrared function is disabled

NO.	Object name	Function	Flags	Data type
4	General	Lock button together	C W T U	DPT 1.003 1bit

This communication object used to lock the button.if receive the value “1”,and all buttons locked, if receive the value “0”,and all buttons is unlocked.

NO.	Object name	Function	Flags	Data type
5..12	General	Lock left or right of rocker N	C W T U	DPT 1.003 1bit

Threse communication objects used to lock the single button.if receive the value “1”,and the single button locked, if receive the value “0”,and the single button is unlocked.

NO.	Object name	Function	Flags	Data type
13..20	General	Trigger left or right of rocker N	C W T U	DPT 1.011 1bit

Threse communication objects used to trigger the single button.if receive the value “1”,and the single button triggered, if receive the value “0”,and the single button no triggered.

It is only can get a short operation when using the remote trigger button objects, Long operate is impossible.

## 4.2 Objects “Switch controller”

Number	Name	Object Function	Descript...	Group Add...	Length	C	R	W	T	U
0	General	Send cycles			1 bit	C	R	-	T	-
30	Rocker A left	Switching			1 bit	C	-	W	T	U
31	Rocker A right	Switching			1 bit	C	-	W	T	U
80	Rocker B left	Switching			1 bit	C	-	W	T	U
81	Rocker B right	Switching			1 bit	C	-	W	T	U
130	Rocker C left	Switching			1 bit	C	-	W	T	U
131	Rocker C right	Switching			1 bit	C	-	W	T	U
180	Rocker D left	Switching			1 bit	C	-	W	T	U
181	Rocker D right	Switching			1 bit	C	-	W	T	U

NO.	Object name	Function	Flags	Data type
30	Rocker N left	switching	C W T U	DPT 1.001 1bit
31	Rocker N right	Switching	C W T U	DPT 1.001 1bit
.....				

These communication objects used for switching other switch device. Send telegram value “1” for ON,send telegram value “0” for OFF

## 4.3 Objects “Dimming controller”

Number	Name	Object Function	Descript...	Group Add...	Length	C	R	W	T	U
0	General	Send cycles			1 bit	C	R	-	T	-
30	Rocker A short	Switching			1 bit	C	-	W	T	U
32	Rocker A long	Dimming			4 bit	C	-	W	T	-
80	Rocker B short	Switching			1 bit	C	-	W	T	U
82	Rocker B long	Dimming			4 bit	C	-	W	T	-
130	Rocker C short	Switching			1 bit	C	-	W	T	U
132	Rocker C long	Dimming			4 bit	C	-	W	T	-
180	Rocker D short	Switching			1 bit	C	-	W	T	U
182	Rocker D long	Dimming			4 bit	C	-	W	T	-

NO.	Object name	Function	Flags	Data type
32	Rocker N long	Dimming	C W T	DPT 3.007 4bits
.....				

These communication objects used for dimming the dimmer.Increase or decrease the light brightness.

#### 4.4 Objects “Shutter controller”

Number	Name	Object Function	Descript...	Group Add...	Length	C	R	W	T	U
0	General	Send cycles			1 bit	C	R	-	T	-
35	Rocker A short	Adjust for shutter			1 bit	C	-	W	T	U
36	Rocker A long	Move for shutter			1 bit	C	-	W	T	U
85	Rocker B short	Adjust for shutter			1 bit	C	-	W	T	U
86	Rocker B long	Move for shutter			1 bit	C	-	W	T	U
135	Rocker C short	Adjust for shutter			1 bit	C	-	W	T	U
136	Rocker C long	Move for shutter			1 bit	C	-	W	T	U
185	Rocker D short	Adjust for shutter			1 bit	C	-	W	T	U
186	Rocker D long	Move for shutter			1 bit	C	-	W	T	U

NO.	Object name	Function	Flags	Data type
35	Rocker N short	Adjust for shutter	C W T U	DPT 1.007 1bit
36	Rocker N long	Move for shutter	C W T U	DPT 1.008 1bit
.....				

These communication objects used for Adjust and Move the shutter. Send the telegram value “1” to adjust or move, or send telegram value “0” to stop adjust.

#### 4.5 Objects “Flexible controller”

Number	Name	Object Function	Descript...	Group Add...	Length	C	R	W	T	U
0	General	Send cycles			1 bit	C	R	-	T	-
37	Rocker A left	Flexible			1 bit	C	-	W	T	U
38	Rocker A right	Flexible			1 bit	C	-	W	T	U
87	Rocker B left	Flexible			1 bit	C	-	W	T	U
88	Rocker B right	Flexible			1 bit	C	-	W	T	U
137	Rocker C left	Flexible			1 bit	C	-	W	T	U
138	Rocker C right	Flexible			1 bit	C	-	W	T	U
187	Rocker D left	Flexible			1 bit	C	-	W	T	U
188	Rocker D right	Flexible			1 bit	C	-	W	T	U

NO.	Object name	Function	Flags	Data type
37	Rocker N left	Flexible	C W T U	DPT 1.001 1bit
37	Rocker N right	Flexible	C W T U	DPT 1.001 1bit

.....				
Threse communication objects used for Adjust and Move the shutter.Send the telegram value “1” to adjust or move, or send telegram value “0” to stop adjust.				

## 4.6 Objects “Scene controller”

Number	Name	Object Function	Descript...	Group Add...	Length	C	R	W	T
0	General	Send cycles			1 bit	C	R	-	T
39	Rocker A short	Call scene			1 Byte	C	-	W	T
40	Rocker A long	Scene dimming			4 bit	C	-	W	T
89	Rocker B short	Call scene			1 Byte	C	-	W	T
90	Rocker B long	Scene dimming			4 bit	C	-	W	T
139	Rocker C short	Call scene			1 Byte	C	-	W	T
140	Rocker C long	Scene dimming			4 bit	C	-	W	T
189	Rocker D short	Call scene			1 Byte	C	-	W	T
190	Rocker D long	Scene dimming			4 bit	C	-	W	T

NO.	Object name	Function	Flags	Data type
39	Rocker N short	Call scene,	C W T	DPT 18.001 1byte
40	Rocker N long	Scene dimming	C W T	DPT 3.007 4bits
.....				

Threse communication objects used for Call and Scene dimming,Call scene NO. is 1 to 64 and the value is 0 to 63. The Scene dimming is 4bits value.

## 4.7 Objects “Sequence controller”

Number	Name	Object Function	Descript...	Group Add...	Length	C	R	W	T	U
0	General	Send cycles			1 bit	C	R	-	T	-
41	Rocker A left	Sequence			1 bit	C	-	W	T	U
42	Rocker A right	Sequence			1 bit	C	-	W	T	U
91	Rocker B left	Sequence			1 bit	C	-	W	T	U
92	Rocker B right	Sequence			1 bit	C	-	W	T	U
141	Rocker C left	Sequence			1 bit	C	-	W	T	U
142	Rocker C right	Sequence			1 bit	C	-	W	T	U
191	Rocker D left	Sequence			1 bit	C	-	W	T	U
192	Rocker D right	Sequence			1 bit	C	-	W	T	U

NO.	Object name	Function	Flags	Data type
41	Rocker N left	Sequence	C W T U	DPT 1.001 1bit
42	Rocker N right	Sequence	C W T U	DPT 1.001

				1bit
.....				
Threse communication objects used for start and stop sequence. Send the telegram value “1” to start one sequence, and send the telegram value ‘0’ to stop on sequence.				

## 4.8 Objects “Percentage controller”

Number	Name	Object Function	Descript...	Group Add...	Length	C	R	W	T	U
0	General	Send cycles			1 bit	C	R	-	T	-
43	Rocker A	Percentage			1 Byte	C	-	W	T	-
93	Rocker B	Percentage			1 Byte	C	-	W	T	-
143	Rocker C	Percentage			1 Byte	C	-	W	T	-
193	Rocker D	Percentage			1 Byte	C	-	W	T	-

NO.	Object name	Function	Flags	Data type
44	Rocker N	Percentage	C W T	DPT 5.001
93				1byte
.....				
Threse communication objects used for control some device, eg:dimmer.Absolute dimming the brightness.				

## 4.9 Objects “Combination controller”

Number	Name	Object Function	Description	Group Add...	Length	C	R	W	T	U
0	General	Send cycles			1 bit	C	R	-	T	-
44	Rocker A left	COMB OBJ1 switching			1 bit	C	-	W	T	-
45	Rocker A left	COMB OBJ2 shutter			1 bit	C	-	W	T	-
46	Rocker A left	COMB OBJ3 scene			1 Byte	C	-	W	T	-
47	Rocker A left	COMB OBJ4 sequence			1 bit	C	-	W	T	-
48	Rocker A left	COMB OBJ5 percentage			1 Byte	C	-	W	T	-
49	Rocker A left	COMB OBJ6 String(14bytes)			14 Byte	C	-	W	T	-
56	Rocker A right	COMB OBJ1 switching			1 bit	C	-	W	T	-
57	Rocker A right	COMB OBJ2 shutter			1 bit	C	-	W	T	-
58	Rocker A right	COMB OBJ3 scene			1 Byte	C	-	W	T	-
59	Rocker A right	COMB OBJ4 sequence			1 bit	C	-	W	T	-
60	Rocker A right	COMB OBJ5 percentage			1 Byte	C	-	W	T	-
61	Rocker A right	COMB OBJ6 String(14bytes)			14 Byte	C	-	W	T	-

NO.	Object name	Function	Flags	Data type
44	Rocker N left	COMB OBJ1 switching	C W T	DPT 1.001 1bit
45	Rocker N left	COMB OBJ2 shutter	C W T	DPT 1.008 1bit
46	Rocker N left	COMB OBJ3 scene	C W T	DPT 18.001 1byte
47	Rocker N left	COMB OBJ4 sequence	C W T	DPT 1.010 1bit
48	Rocker N left	COMB OBJ5 percentage	C W T	DPT 5.001 1byte
49	Rocker N left	COMB OBJ6 String(14bytes)	C W T	DPT 16.000 1byte
56	Rocker N right	COMB OBJ1 switching	C W T	DPT 1.001 1bit
57	Rocker N right	COMB OBJ2 shutter	C W T	DPT 1.008 1bit
58	Rocker N right	COMB OBJ3 scene	C W T	DPT 18.001 1byte
59	Rocker N right	COMB OBJ4 sequence	C W T	DPT 1.010 1bit
60	Rocker N right	COMB OBJ5 percentage	C W T	DPT 5.001 1byte
61	Rocker N right	COMB OBJ6 String(14bytes)	C W T	DPT 16.000 14bytes

These communication objects used for control of multiple objects at the same time. So, Multiple object can synchronization operation.

4.10 Objects “14 byte value controller(string)”

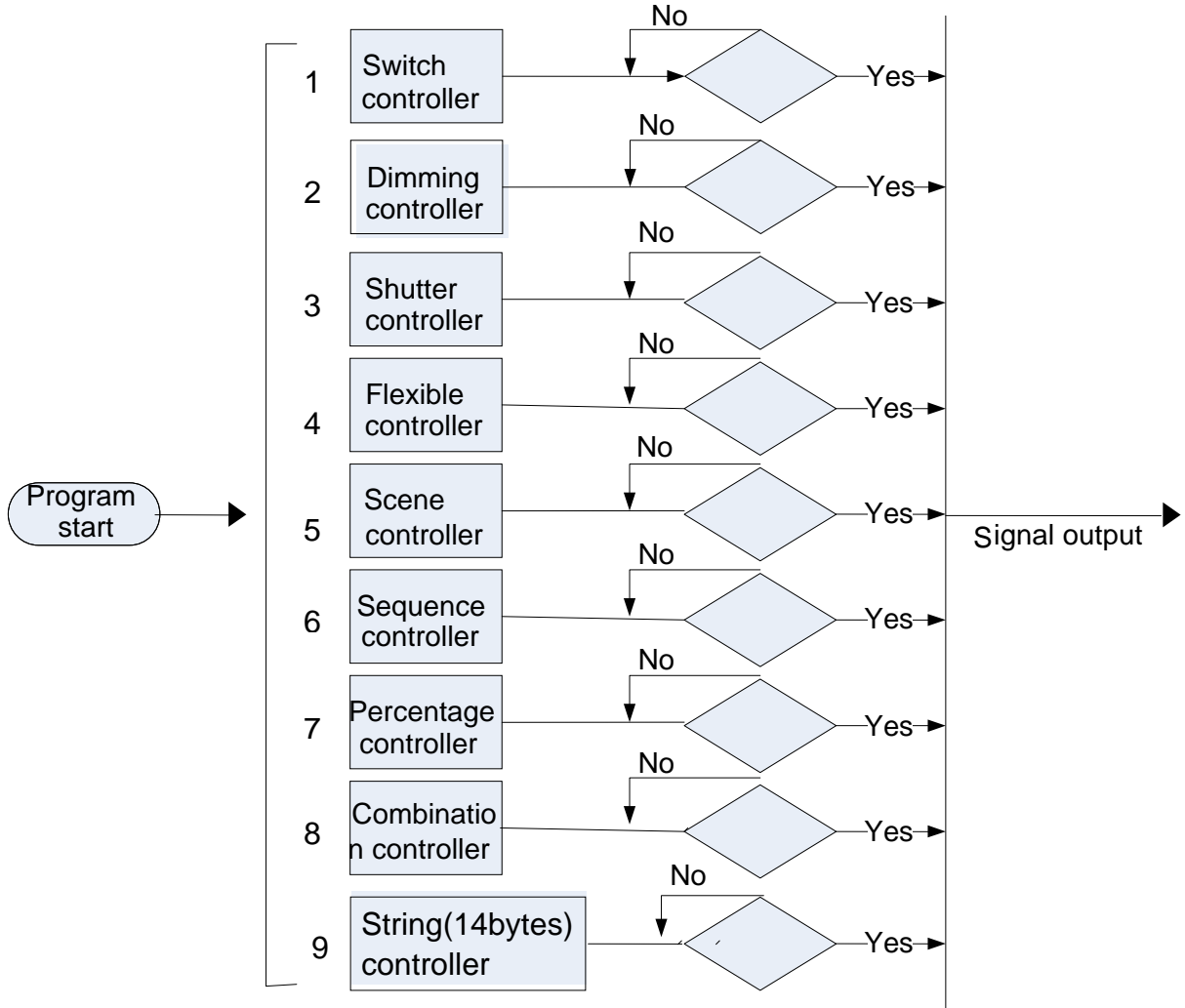
Number	Name	Object Function	Descript...	Group Add...	Length	C	R	W	T	U
0	General	Send cycles			1 bit	C	R	-	T	-
71	Rocker A	14 bytes value(string)			14 Byte	C	-	W	T	-
121	Rocker B	14 bytes value(string)			14 Byte	C	-	W	T	-
171	Rocker C	14 bytes value(string)			14 Byte	C	-	W	T	-
221	Rocker D	14 bytes value(string)			14 Byte	C	-	W	T	-

NO.	Object name	Function	Flags	Data type
71	Rocker N	14 byte value	C W T	DPT 16.000
121				14byte
.....				

These communication objects used for control 14 byte value. According to the set and send corresponding variables.

### 5-Application

#### 5.1 Program functions diagram



The panel has 9 functions, only chose one function at the same time.







