



HDL M/S48.1 KNX 48 路干接点模块

使用说明书

英文版

图号: HDL

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批准: \_\_\_\_\_

日期: \_\_\_\_\_年\_\_\_\_月\_\_\_\_日

广州河东科技有限公司



**HDL M/S48.1**  
**KNX 48CH Dry Contact Module**  
**User Manual**

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Release Date: 2023/06/24

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GZ HDL Technology Co., L

## Modification Record

This record accumulates instructions for each document update. The latest version of the document contains updates from all previous document versions。

Num	Version	Modification Content	Date
1	V1.0.0	First official release	2021/05/28

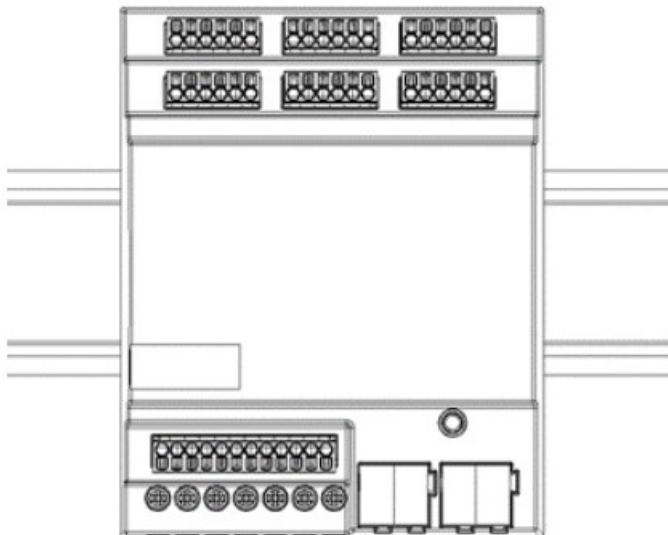
# 1 Overview

## 1.1 General Information

### 1.1.1 Description

KNX 48CH Dry Contact Module is a KNX standard protocol module with 48 dry contact channels, which enables control of lights, curtains, scenes, etc.

### 1.1.2 Device Installation



- Distribution board installation

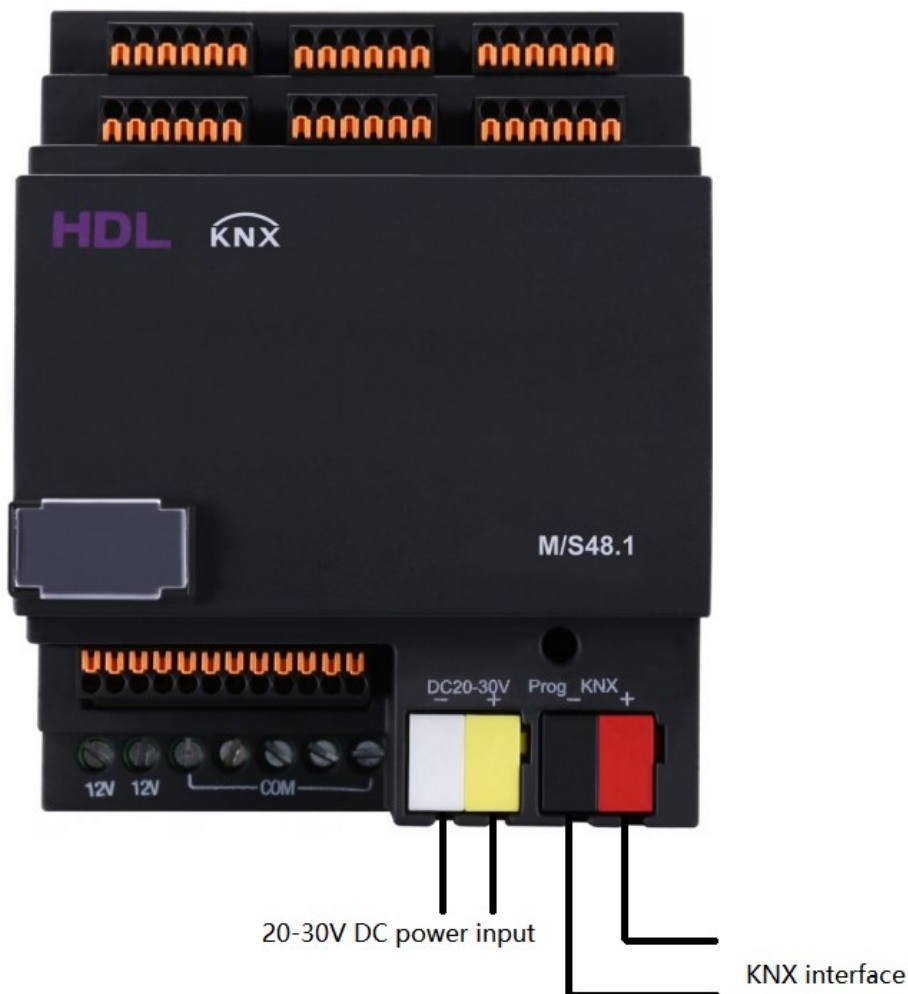
## 1.2 Functionalities

- 48 dry contact channels, which enable to switch dry contact input and output.
- Can be used to detect dry contacts, and can control switches, scenes, curtains, etc. when as input channel
- Output pulse signal to drive an LED status indicator when as output channel.

- Supported dry contact types: mechanical switch and electronic switch.
- Control types: switch control, curtain control, scene control, percentage control, logic control.
- Supports up to 10 scenes, and up to 10 output targets can be set for each scene.
- Logical relationships include: AND, OR, NAND, NOR, XOR.

### 1.3 Connections

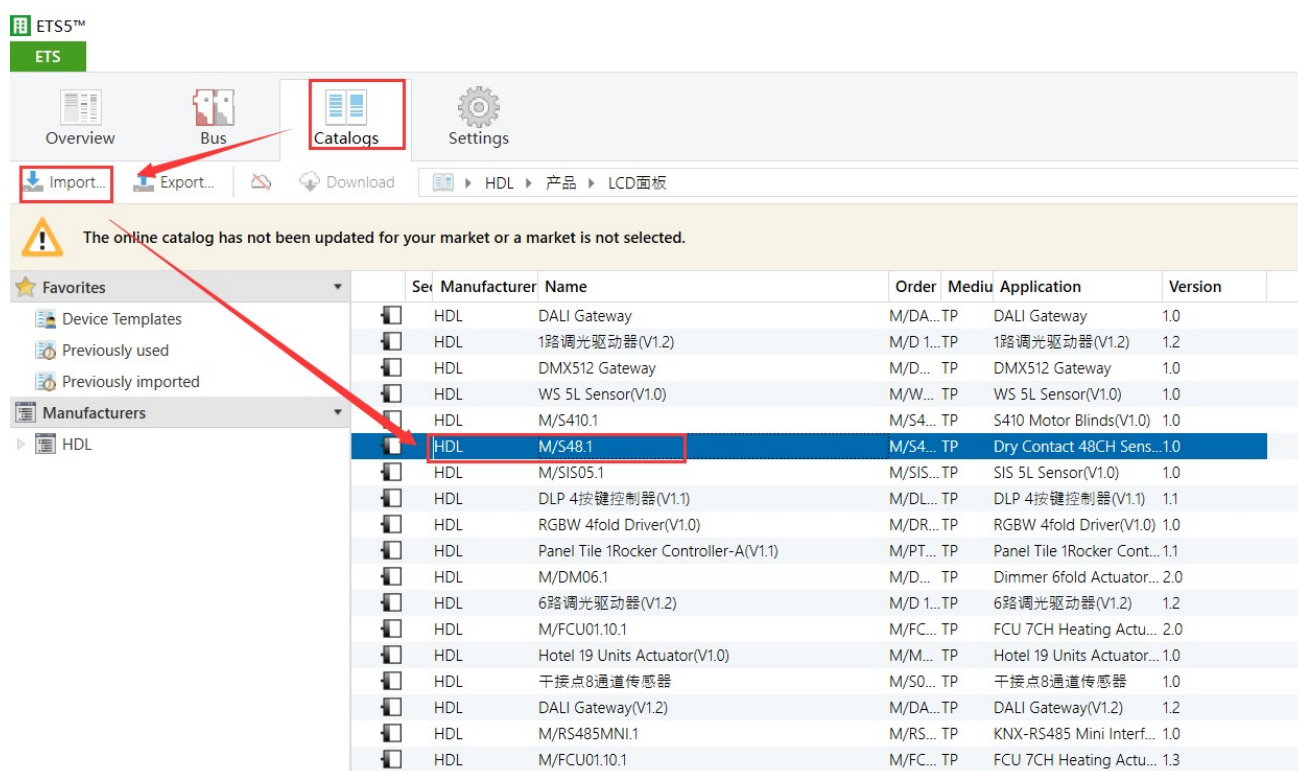
Device connection: KNX 48CH Dry Contact Module connect with the system by the KNX interface and the 20-30V DC power input.



## 2 Import Data

### 2.1 Import Database to ETS (.knxprod)

Import Catalogs: click “Catalogs” → “Import...” in the main page of ETS5 software and select local database files with the suffix of .knxprod.



#### 2.1.1 Import Projects (.knxproj)

Open ETS5 and click “Import project” button of “Your Project” tab of “Overview” page and import obtained KNX project files with the suffix of .knxproj. After importing projects, added/created projects will be listed below. Double click to edit.



ETSS™  
ETS

Overview Bus Catalogs Settings

Projects Archive ETS Inside

+ - Download

Search

### Create New Project

**Name**

**Backbone**

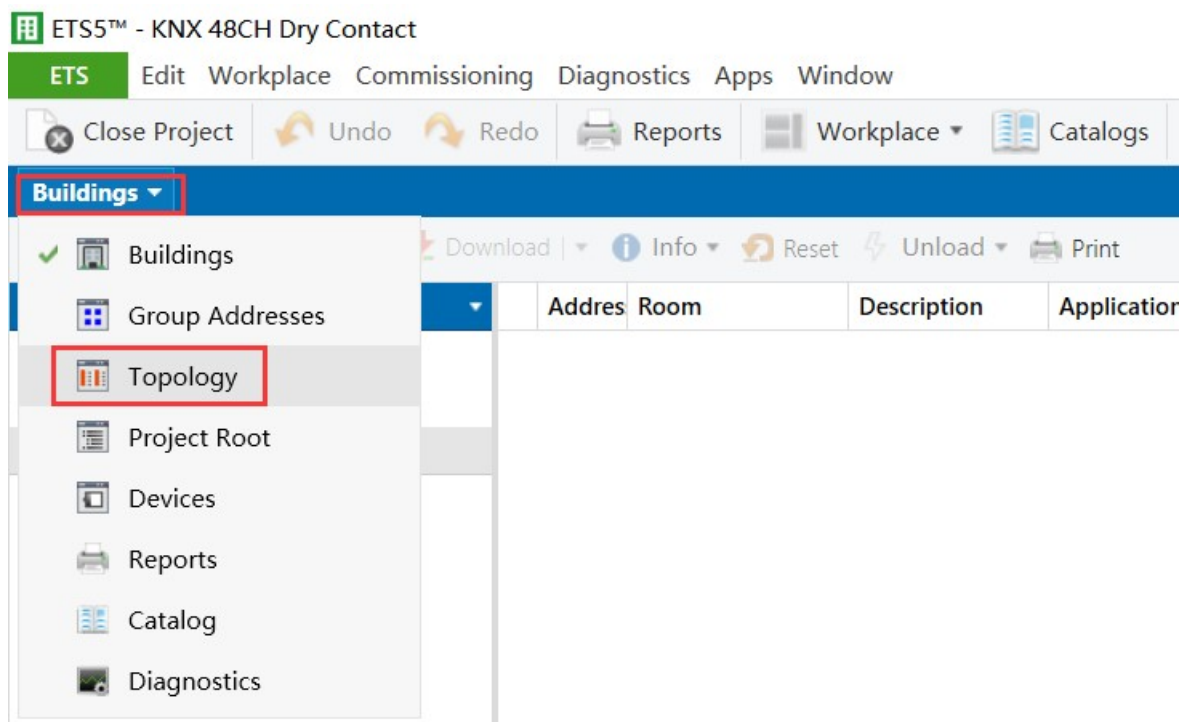
**Topology**  
☒ Create Line 1.1

**Group Address Style**  
☐ Free  
☐ Two Level  
☒ Three Level

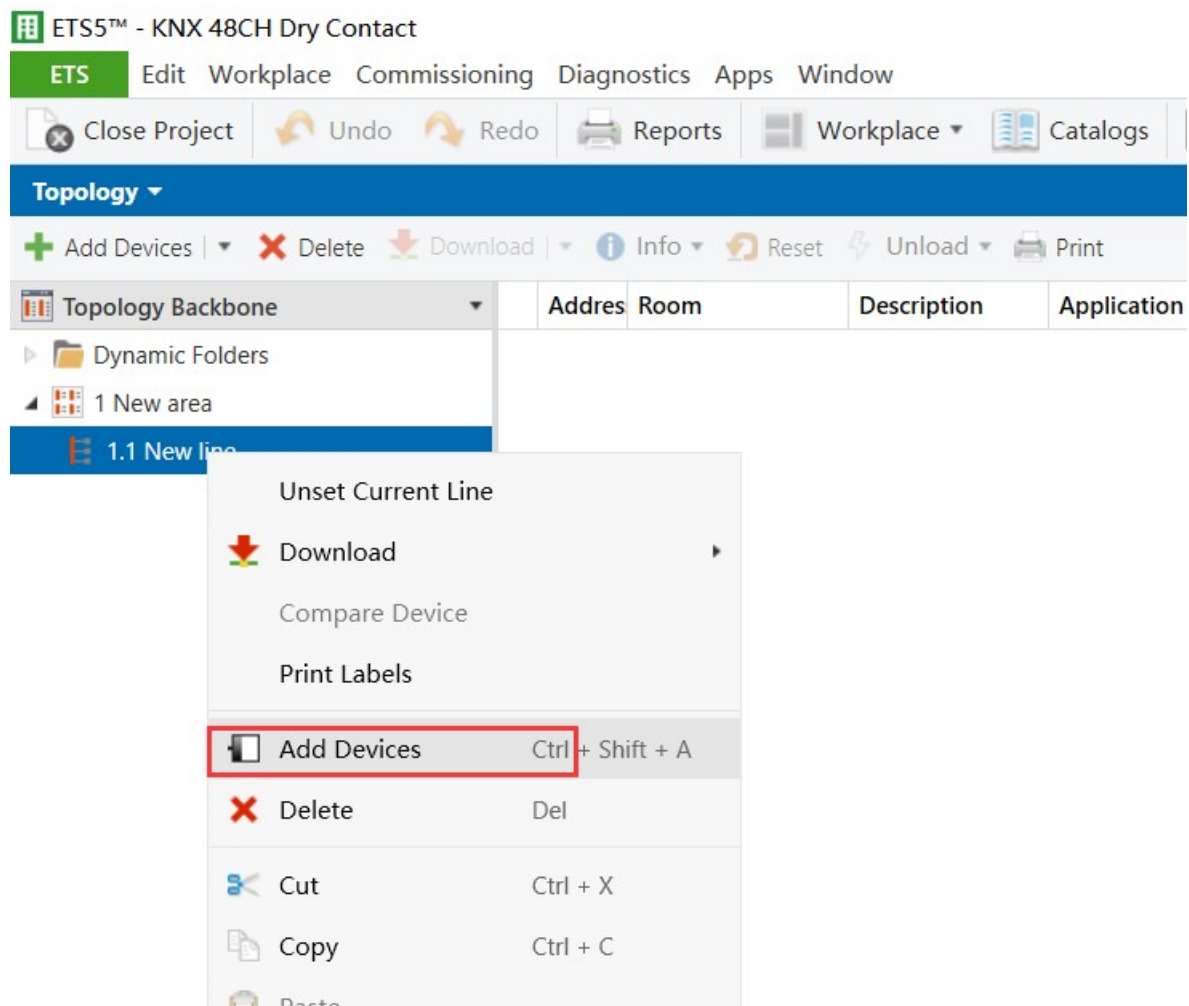
	Last Modified ▼	Status
	2021/5/20 11:45	Editing
	2021/5/20 9:14	Editing
	2021/5/18 17:10	Editing
	2021/5/14 15:14	Tested
	2021/5/14 11:42	Editing
	2021/5/12 15:01	Editing
	2021/4/30 17:37	Editing
	2021/4/22 14:55	Editing
	2021/4/16 14:13	Editing
0 (1)	2021/4/5 20:29	Unknown
	2021/4/5 16:44	Unknown
	2021/4/5 16:18	Unknown

## 2.1.2 Add Devices to Projects

① After creating a project, the project page will show up by default. Click “Buildings” and select “Topology” .



② click the arrow beside “Add Areas” and select “Devices”, and the catalog page will show up below.



③ Click “HDL” in “Manufactures” column and select devices to be added to the project on the right. Drag devices to the above area (Method 1) or click “Add” button to add devices after clicking the location needed to add projects below (Method 2).

ETS™ - KNX 48CH Dry Contact

ETS Edit Workplace Commissioning Diagnostics Apps Window

Close Project Undo Redo Reports Workplace Catalogs Diagnostics

Topology

+ Add Devices - Delete Download Info Reset Unload Print Search

Topology Backbone

- Dynamic Folders
- 1 New area
- 1.1 New line

Address Room Description Application Program Adr Prg Par Grp Cfg Manufacturer

Devices Parameter

Catalog

Import... Export... Download HDL 产品 CD面板 Search

The online catalog has not been updated for your market or a market is not selected.

Favorites

- Device Templates
- Previously used
- Previously imported

Manufacturers

- HDL

Set	Manufacturer	Name	Order Number	Medium	Application	Version
	HDL	DALI Gateway	M/DALI 1410 DL001	TP	DALI Gateway	1.0
	HDL	1路调光驱动器(V1.2)	M/D 1010 D001	TP	1路调光驱动器(V1.2)	1.2
	HDL	DMX512 Gateway	M/DMX 1109 D001	TP	DMX512 Gateway	1.0
	HDL	WS 5L Sensor(V1.0)	M/WS 1409 H004	TP	WS 5L Sensor(V1.0)	1.0
	HDL	M/S410.1	M/S410 1811 W006	TP	S410 Motor Blinds(V1.0)	1.0
	HDL	M/S48.1	M/S48.1 1903	TP	Dry Contact 48CH Sens...	1.0
	HDL	M/SIS05.1	M/SIS 1901 S001	TP	SIS 5L Sensor(V1.0)	1.0
	HDL	DLP 4按钮控制器(V1.1)	M/DLP 1209 P001	TP	DLP 4按钮控制器(V1.1)	1.1
	HDL	RGBW 4fold Driver(V1.0)	M/DRGBW4 1504 D10	TP	RGBW 4fold Driver(V1.0)	1.0
	HDL	RGBW 4fold Driver(V1.0)	M/DRGBW4 1504 D10	TP	RGBW 4fold Driver(V1.0)	1.0

Items: 1 in Lines 1.1 New line Add

Method

Method2

## 3 Software Configurations

### 3.1 General

The setting instruction of this page like the follow :

1. System delay: we can set the delay time from 1 to 255s.
2. Heartbeat telegram: it is work with the third party device, tell the third party devices the timer is online, we can select disable or send value cyclically.
3. Channel1: there are totally 48 channels, we can set “Disable”, “Input” and “Output” for the channel.

## 1.1.47 M/S48.1 &gt; General

General	System delay(1..255s)	1
Input 1	Heartbeat telegram	Disable
Input 2	Binary channel=====	
Input 3	Channel 1	Input
Input 4	Channel 2	Input
Input 5	Channel 3	Input
Input 6	Channel 4	Input
	Channel 5	Input
	Channel 6	Input

4. Scene A: we can enable and disable it. There are 10 scenes totally.

## 1.1.47 M/S48.1 &gt; General

General	Channel 48	Diabale
Input 1	Debounce time	10ms
Input 2	Scene=====	
Input 3	Scene A	<input type="radio"/> Disable <input checked="" type="radio"/> Enable
Input 4	Scene B	<input type="radio"/> Disable <input checked="" type="radio"/> Enable
Input 5	Scene C	<input type="radio"/> Disable <input checked="" type="radio"/> Enable
Input 6	Scene D	<input type="radio"/> Disable <input checked="" type="radio"/> Enable
Input 7	Scene E	<input checked="" type="radio"/> Disable <input type="radio"/> Enable
Input 8	Scene F	<input checked="" type="radio"/> Disable <input type="radio"/> Enable
Input 9	Scene G	<input checked="" type="radio"/> Disable <input type="radio"/> Enable
Input 10	Scene H	<input checked="" type="radio"/> Disable <input type="radio"/> Enable
	Scene I	<input checked="" type="radio"/> Disable <input type="radio"/> Enable
	Scene J	<input checked="" type="radio"/> Disable <input type="radio"/> Enable

5. Logic A: we can enable and disable it. There are 10 scenes totally.

1.1.47 M/S48.1 > General

General	Scene D	<input type="radio"/> Disable <input checked="" type="radio"/> Enable
Input 1	Scene E	<input checked="" type="radio"/> Disable <input type="radio"/> Enable
Input 2	Scene F	<input checked="" type="radio"/> Disable <input type="radio"/> Enable
Input 3	Scene G	<input checked="" type="radio"/> Disable <input type="radio"/> Enable
Input 4	Scene H	<input checked="" type="radio"/> Disable <input type="radio"/> Enable
Input 5	Scene I	<input checked="" type="radio"/> Disable <input type="radio"/> Enable
Input 6	Scene J	<input checked="" type="radio"/> Disable <input type="radio"/> Enable
Input 7	Logic A	<input type="radio"/> Disable <input checked="" type="radio"/> Enable
Input 8	Logic B	<input type="radio"/> Disable <input checked="" type="radio"/> Enable
Input 9	Logic C	<input type="radio"/> Disable <input checked="" type="radio"/> Enable
Input 10	Logic D	<input type="radio"/> Disable <input checked="" type="radio"/> Enable
Scene A	Logic E	<input checked="" type="radio"/> Disable <input type="radio"/> Enable
Scene B	Logic F	<input checked="" type="radio"/> Disable <input type="radio"/> Enable
Scene C	Logic G	<input checked="" type="radio"/> Disable <input type="radio"/> Enable
Scene D	Logic H	<input checked="" type="radio"/> Disable <input type="radio"/> Enable
	Logic I	<input checked="" type="radio"/> Disable <input type="radio"/> Enable
	Logic J	<input checked="" type="radio"/> Disable <input type="radio"/> Enable

## 3.2 Input 1

From input 1 page, we can select mechanical switch and electronic switch

### 3.2.1 Mechanical switch

1.1.47 M/S48.1 > Input 1

General	Contact type	<input checked="" type="radio"/> Mechanical switch <input type="radio"/> Electronic switch
Input 1	Action delay for closed(0..255sec)	0
Input 2	Action delay for opened(0..255sec)	0
Input 3	Action when closed	Switch control
Input 4	--Switch control value	Off
Input 5	Action when opened	Switch control
Input 6	--Switch control value	Off

1. Contact type: we can select mechanical switch and electrical switch.
2. Action delay for closed(0...255sec): Set the delay time for closed, range from 0s to 255s.
3. Action delay for opened(0...255sec): Set the delay time for opened, range from 0s to 255s.
4. Action when closed: we can select below option  
 Switch control: the target can be lighting, curtain and AC, for the switch control value, we can select "Off", "On" and "Off/On alternate".  
 Curtain control: control the curtain motor and curtain module, for the curtain control value, we can select "Up", "Down", "Up/Down alternate", "Step decrease/Stop", "Step increase/Stop", "Step alternate/Stop" and "Step".  
 Scene control: we can trigger different scene by this function. For the scene number, we can set from Scene No.1 to Scene No.64.  
 Percentage control: we can trigger different scene by this function. The percentage control value can be from 0% to 100%.  
 1 bit data: control the start and stop of sequence. We can set value 0, 1, 0/1 alternate.  
 1 byte interge: control the percentage of lighting or curtain. The value is from 0-255.  
 2 bytes interge: we can send the threshold value to bus by this control type. The value is from 0-65535.  
 2 bytes float: send the string to bus. The value is from -99.0-999.0.  
 No action: there is no output if select this option.
5. Action when opened: the option is the same as action when closed.



### 3.2.2 Electronic switch

1.1.47 M/S48.1 > Input 1		
General	Contact type	<input type="radio"/> Mechanical switch <input checked="" type="radio"/> Electronic switch
Input 1	Action delay for short press(0..255sec)	0
Input 2	Action delay for long press(0..255sec)	0
Input 3	Normally contact type	<input checked="" type="radio"/> Opened <input type="radio"/> Closed
Input 4	Action when short press	Switch control
Input 5	--Switch control value	Off
Input 6	Long press after(1..255sec)	2
Input 7	Action when long press	Switch control
	--Switch control value	Off

1. Contact type: we can select mechanical switch and electrical switch.
2. Action delay for short press(0..255sec): the delay time can be from 0 to 255s.
3. Action delay for long press(0..255sec): the delay time can be from 0 to 255s.
4. Normally contact type: we can select opened and closed.
5. Action when short press: we can select below option

Switch control: the target can be lighting, curtain and AC, for the switch control value, we can select "Off", "On" and "Off/On alternate".

Curtain control: control the curtain motor and curtain module, for the curtain control value, we can select "Up", "Down", "Up/Down alternate", "Step decrease/Stop", "Step increase/Stop", "Step alternate/Stop" and "Step".

Scene control: we can trigger different scene by this function. For the scene number, we can set from Scene No.1 to Scene No.64.

Sequence control: we can select stop, start and stop/start alternate.

1 bit data: control the 1 bit target. We can set value 0, 1, 0/1 alternate.

1 byte interge: control the percentage of lighting or curtain. The value is from 0-255.

2 bytes interge: we can send the threshold value to bus by this control type. The value is from 0-65535.

2 bytes float: send the string to bus. The value is from -99.0-999.0.

No action: there is no output if select this option.

6. Action when long press: the option is the same as action when short press.



### 3.3 Output 1

1.1.47 M/S48.1 > Output 1		
General	State_after_voltage_recovery	ON
Output 1	On brightness setting	100%
Input 2	Off brightness setting	0%
Input 3	Change LED status via EIB	<input checked="" type="radio"/> Disable <input type="radio"/> Enable
Input 4	Change ON status brightness via EIB	<input checked="" type="radio"/> Disable <input type="radio"/> Enable
Input 5	Change OFF status brightness via EIB	<input checked="" type="radio"/> Disable <input type="radio"/> Enable

1. State after voltage recovery: we can set "ON", "OFF" and "Recovery".
2. On brightness setting: we can from 0% to 100%.
3. Off brightness setting: we can from 0% to 100%.
4. Change LED status via EIB: we can "Disable" and "Enable".
5. Change ON status brightness via EIB: we can select "Disable" and "Enable".
6. Change OFF status brightness via EIB: we can select "Disable" and "Enable".

### 3.4 Scene A

1.1.47 M/S48.1 > Scene A		
Input 3	Output assigned to(scene1..64)	Scene NO.1
Input 4	1 bit object control	<input checked="" type="radio"/> Disable <input type="radio"/> Enable
Input 5	Entry delay time(0..255s)	0
Input 6	Output object <1> type	Invalid
Input 7	Output object <2> type	Invalid
Input 8	Output object <3> type	Invalid
Input 9	Output object <4> type	Invalid
Input 10	Output object <5> type	Invalid
Scene A	Output object <6> type	Invalid
Scene B	Output object <7> type	Invalid
Scene C	Output object <8> type	Invalid
	Output object <9> type	Invalid
	Output object <10> type	Invalid

1. Output assigned to (scene1..64): we can set from Scene NO.1 to Scene NO.2.
2. 1 bit object control: we can enable and disable it.

3. Entry delay time(0..255s): we can set from 0-255s.
4. Output object <1> type: we can select "Invalid", "1bit value", "1byte value(0..100%)", "1byte value(0..255)" , "2byte value(Float)", 2byte value(0..65535) and 3 byte value(RGB).

## 3.5 Logic A

1.1.47 M/S48.1 > Logic A

Input 4	Logical operation	AND
Input 5	Input 1	<input checked="" type="radio"/> Normal <input type="radio"/> Inverted
Input 6	--Default value	<input checked="" type="radio"/> 0 <input type="radio"/> 1
Input 7	Input 2	<input checked="" type="radio"/> Normal <input type="radio"/> Inverted
Input 8	--Default value	<input checked="" type="radio"/> 0 <input type="radio"/> 1
Input 9	Input values after bus voltage recovery	<input checked="" type="radio"/> Unchanged <input type="radio"/> Recovery
Input 10	Output	<input checked="" type="radio"/> Normal <input type="radio"/> Inverted
Scene A	Send output values	after received new telegram
Scene B	Send delay in s[0...65,535]	0
Scene C		
Scene D		
Logic A		

1. Logic operation: we can select "AND", "OR", "NAND", "NOR", "XOR".
2. Input 1: we can select "Normal" and "Inverted".
3. Default value: we can set "1" and "0" for default value.
4. Input values after bus voltage recovery: set the input status after bus voltage recovery, "Unchanged" and "Recovery" can be selected.
5. Input 2: the same as input 1.
6. Output: set the output value, "Normal" and "Inverted" can be set.
7. Send output values: we can set when to send the output values, there are 3 options: "after receive new telegram", "after object value changed", and "cyclically".
8. Send delay in s[0...65535]: the time can be from 0 to 65535.

## 4 Application

The 48 channels dry contact module can work with input mode and output mode. In the below example, I will use channel 1 as input, and use channel 2 as output.

### 4.1 Switch Control by Day Routine

In this sample, channel 1 of dry contact connect with an electronic switch, and channel 2 of dry contact connect with a LED indicator, the electronic switch control the channel of relay module.

1-In the general page of dry contact module, set “input” for channel 1, and set “output for channel 2”.

General	System delay(1..255s)	1
Input 1	Heartbeat telegram	Disable
Output 2	Binary channel=====	
Input 3	Channel 1	Input
Input 4	Channel 2	Output
	Channel 3	Input
	Channel 4	

2-In the input 1 page of dry contact module, set electronic switch for contact type, select switch control when short press.

1.1.47 M/S48.1 > Input 1		
General	Contact type	<input type="radio"/> Mechanical switch <input checked="" type="radio"/> Electronic switch
Input 1	Action delay for short press(0..255sec)	0
Output 2	Action delay for long press(0..255sec)	0
Input 3	Normally contact type	<input checked="" type="radio"/> Opened <input type="radio"/> Closed
Input 4	Action when short press	Switch control
Input 5	--Switch control value	Off
Input 6	Long press after(1..255sec)	2
	Action when long press	No action

3-In the output 2 page of dry contact module, set the on/off brightness of output, enable “Change ON status brightness via EIB”.

1.1.47 M/S48.1 > Output 2

General	State_after_voltage_recovery	ON
Input 1	On brightness setting	100%
Output 2	Off brightness setting	0%
Input 3	Change LED status via EIB	<input type="radio"/> Disable <input checked="" type="radio"/> Enable
Input 4	Change ON status brightness via EIB	<input checked="" type="radio"/> Disable <input type="radio"/> Enable
Input 5	Change OFF status brightness via EIB	<input checked="" type="radio"/> Disable <input type="radio"/> Enable

4- Link input 1 and output 2 with group address 3/1/1 and 3/1/2.

Number	Name	Object Function	Description	Group Address
11	Input 1:short press	Switch control	ON/OFF output	3/1/1
16	Output 2	LED ON/OFF	ON/OFF status	3/1/2
21	Input 3:short press	Switch control		
22	Input 3:long press	Switch control		
26	Input 4:short press	Switch control		
27	Input 4:long press	Switch control		
31	Input 5:short press	Switch control		
32	Input 5:long press	Switch control		
36	Input 6:short press	Switch control		
37	Input 6:long press	Switch control		

5-In the channel A page of relay module, set “Only after change” for response of switch state.

1.1.48 M/R4.10.1 > Channel A

General	Channel A work mode	Switch actuator
Channel A	Normally connected type	<input type="radio"/> Normally Closed <input checked="" type="radio"/> Normally Opened
Channel B	Response of switch state ON/OFF	Only after change
Channel C	Save statistic for ON switching 'time (hour-2bytes)'	<input checked="" type="radio"/> Disable <input type="radio"/> Enable
Channel D	Save statistic for ON switching 'counter (4bytes)'	<input checked="" type="radio"/> Disable <input type="radio"/> Enable
	Switch state on bus voltage fail	Unchange
	Switch state after bus voltage recovery	Unchange
	Show function page=>>	<input checked="" type="radio"/> No <input type="radio"/> Yes

6-Link group address with the object 10 and 11 in the relay module. After that, download the application to dry contact and the relay, finish the configuration.

Topology ▾					
+ Add Channels   ▾ ✕ Delete ⬇ Download   ▾ ⓘ Info ▾ ⏮ Reset ⚡ Unload ▾ 🖨 Print					
Topology Backbone ▾		Number	Name	Object Function	Description Group Address
▶ Dynamic Folders		10	Output A	Channel output	ON/OFF output 3/1/1
▶ 1 New area		11	Output A	Response status after change	ON/OFF status 3/1/2
▶ 1.1 New line		30	Output B	Channel output	
▶ 1.1.47 M/S48.1		50	Output C	Channel output	
▶ 1.1.48 M/R4.10.1		70	Output D	Channel output	