User manual

Wireless 1CH Relay

HDL-MPR01-RF.18

buspro

www.hdlautomation.com

Document updates:

Version	Date	Description
V1.0	2015.09.05	Finish new document

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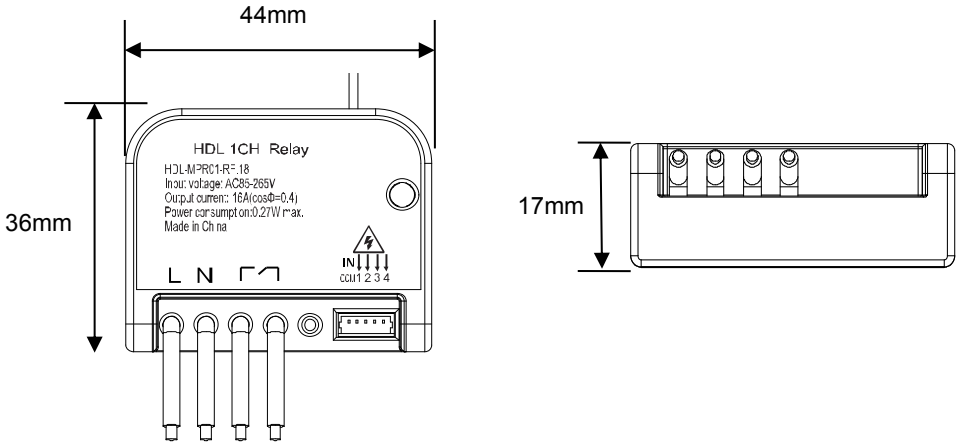
1. Overview

1.1 General Information

1.1.1 Description

HDL-MPR01-RF.18 wireless 1 channel relay, has 4CH dry contact, can control target by switch. This module should be configured by wireless gateway.

1.1.2 Dimensions



- Wall box

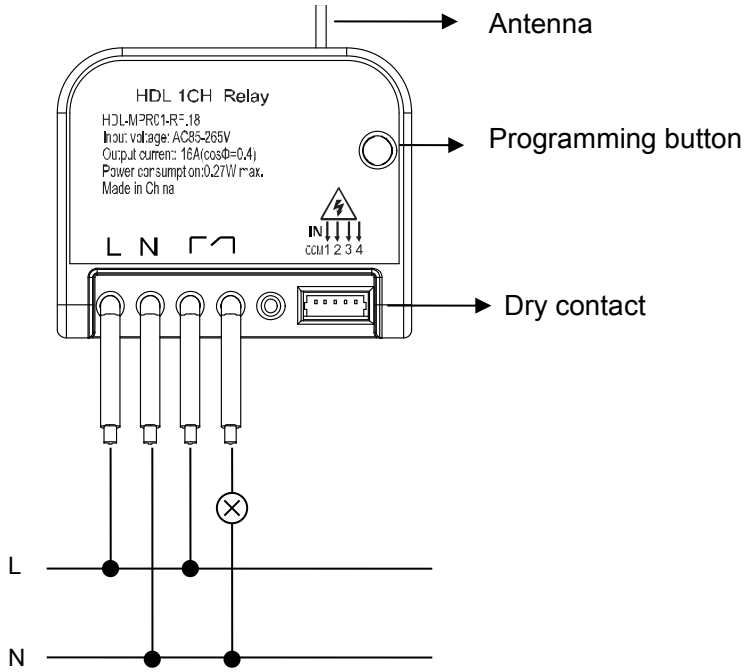
1.2 Functionalities Description

- 1CH relay output
- Support switch on delay, protection delay, switch off delay, switch off delay
- The 4CH dry contact supports: mechanical switch and electronic switch, can control the target, has dimming function
- The dry contact supports: mechanical switch, single on, single off, single on/off, combination on/off, muti-function, parallel switch
- Each switch type can set switch mode, dimmable two-way, dimmable increase, dimmable reduce.
- Control type: scene, sequence, universal switch, single channel lighting control, broadcast scene, broadcast channel, curtain switch, GPRS control switch, panel

control, security module, z-audio control

- Support IEEE.802.15.4
- Support online upgrading
- Support easy programming

1.3 Device Description



Programming button: if it is working properly, the green light will flicker, press the button three times continuously, the green light will flicker quickly, enters the wireless setup mode (the gateway should enter the setup mode at the same time, so that can set the wireless parameters for it)

2. Safety Instructions

- When power on, cannot touch the power, load, load, dry contact terminal, avoid electric shock.
- Never let the liquids get into the module, it will damage this device.
- Ensure good ventilation.
- Output channel – The following list is the recommended for output channel. To protect the relay, please connect a 16A breaker for each channel.
- Recommended load type and power (work in AC220V)

Motors	2HP (1HP=746W)
Incandescent lamp load	3500W

Inductive transformer	900W
Electronic transformer	1000W
Halogen lamp	3500W
Mercury vapor lamp	
*Uncompensated lamp:	1400W
*Parallel compensated lamp	1400W
Fluorescent lamp T5/T8	
*Uncompensated lamp	1750W
*Parallel compensated lamp	1000W
*DUO lamp	1000W
Dulux lamp	
*Uncompensated lamp	750W
*Parallel compensated lamp	750W

3. Technical Data

Electrical Parameter:	
Input voltage	AC85-265V, 50/60Hz
Output current	16A(cosΦ=0.4)
Power consumption	Max.0.27W
Wireless transmit power	+10dbm
Wireless receive sensitivity	-90dbm
Indoor communication distance	<=30m
RSSI receive signal receiving	>-80dbm
Wireless central frequency:	
WPAN (China)	780 to 786MHz
SRD (Europe)	864 to 870MHz
ISM (North America)	904 to 928MHz
Default band	780MHz
Default PSK	HDL-SecurityKey0
Environmental Condition:	

Working temperature	-5%~45%
Working relative humidity	Up to 90%
Storage temperature	-20%~+60%
Storage relative humidity	Up to 93%
Approved	
CE	
RoHS	
Product Information：	
Dimensions	44×36×17 (mm)
Weight	38.9g
Housing material	PC
Installation	Wall box
Protection degree	IP20
Fire and null wire	1.5mm^2(the module provides 15cm wire)
Load cable	1.5mm^2(the module provides 15cm wire)
Stripping length	5~7mm

4. Important Notes

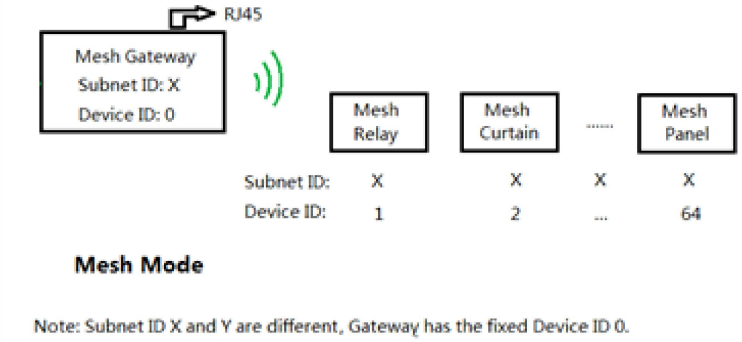
- This module should work with wireless gateway
- Connection – Check the connection, avoid short circuit
- When power on, cannot touch the power, load and dry contact terminal, avoid the electric shock
- The subnet ID of wireless relay should be same as wireless gateway

5. Software Configuration

5.1 Basic Information

5.1.1 Wireless Setting via Mesh Gateway

Before user can configure the wireless relay normally, need to set the wireless parameters for it via mesh gateway, and the mesh gateway needs to work in mesh mode.



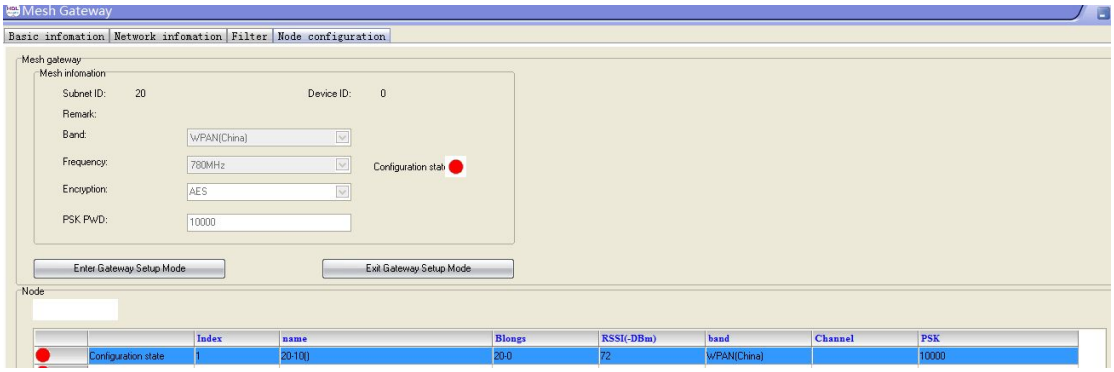
Note: Subnet ID X and Y are different, Gateway has the fixed Device ID 0.

1- Set the free frequency and unique PSK PWD for the gateway

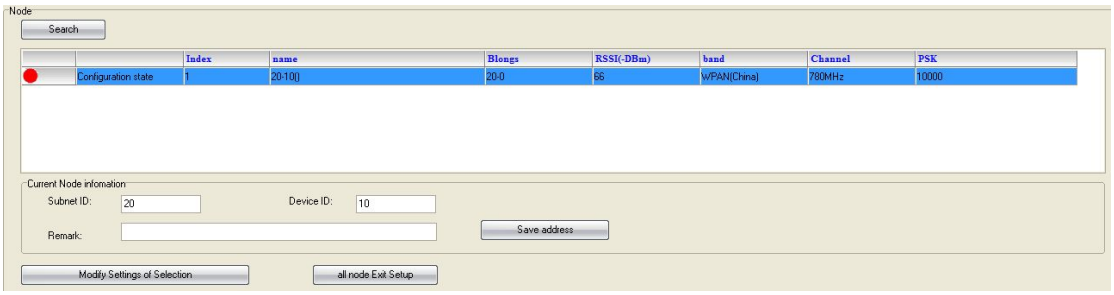
2- Press the 'PROG' button 3 times continuously, the red LED will flash quickly that means the gateway enters the wireless setup mode.

3– Press the programming button of wireless relay 3 times continuously, the green LED will flash quickly, enter the setup mode.

4– Click the 'Search' button, the wireless relay will be shown as below



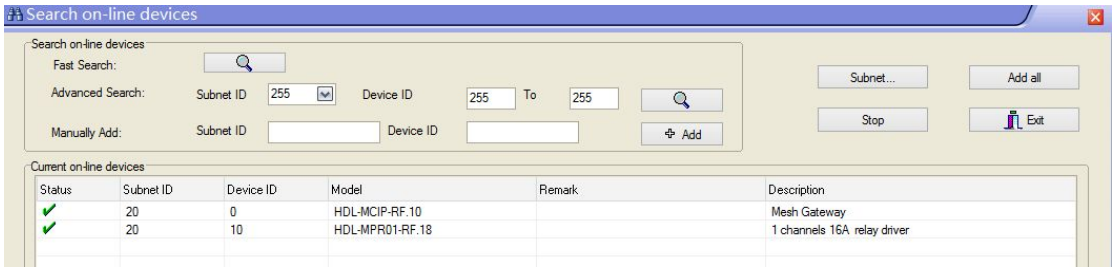
5– Select the module, you will be able to change its ID and remark it (the subnet ID must be same as the gateway)



6– Click 'Modify Setting of Selection', then all its wireless parameters will follow the gateway's (Band, Frequency and PSK).

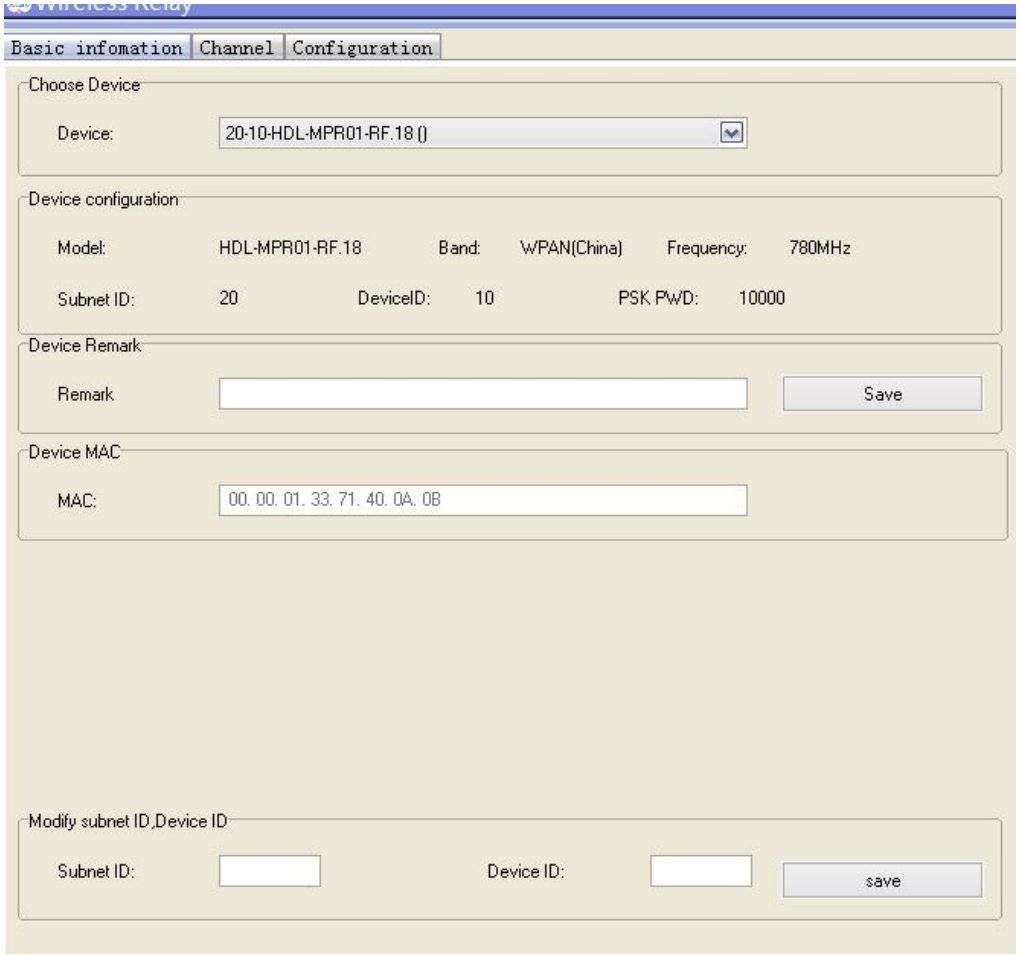
7– Click ‘all Node Exit Setup’, then the wireless devices will exit the wireless setup mode

8– Go to the HDL Buspro setup tool’s main interface to search and add the wireless relay, then can start to configure it.

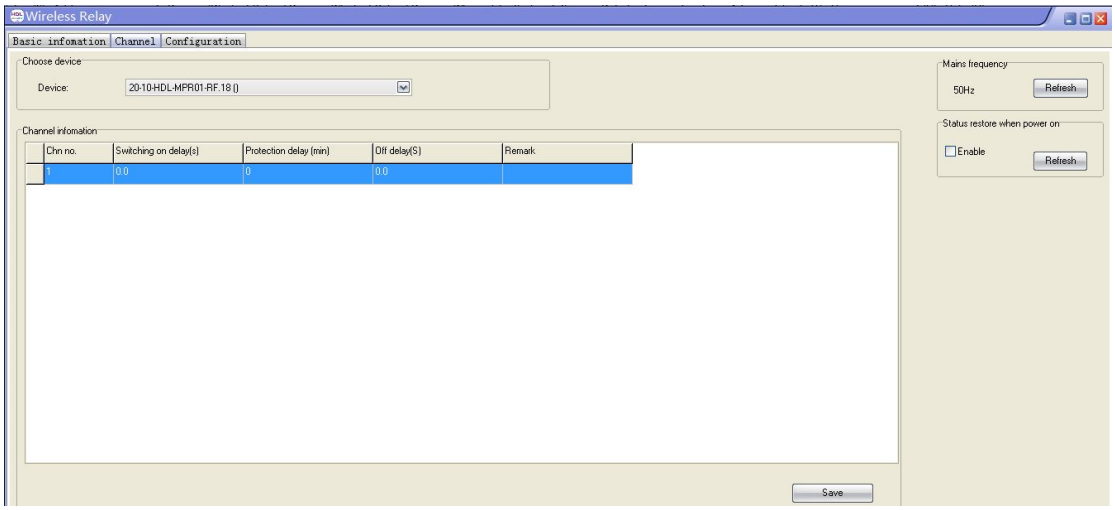


5.1.2 Device Information

Displays the device’s information.



5.2 Channel



5.2.1 Channel Information

Switching on delay: When receives the on command, will not switch on immediately but after the delay time.

Protection delay: If a protection delay of 1 minute is set, and the relay channel is turned off, it cannot be turned on again until 1 minute later. This is useful for loads which are not suitable to be rapidly turned on and off.

Off delay: when receives the off command, will not switch off immediately but after the delay time.

Remark: Do the remark for easy management.

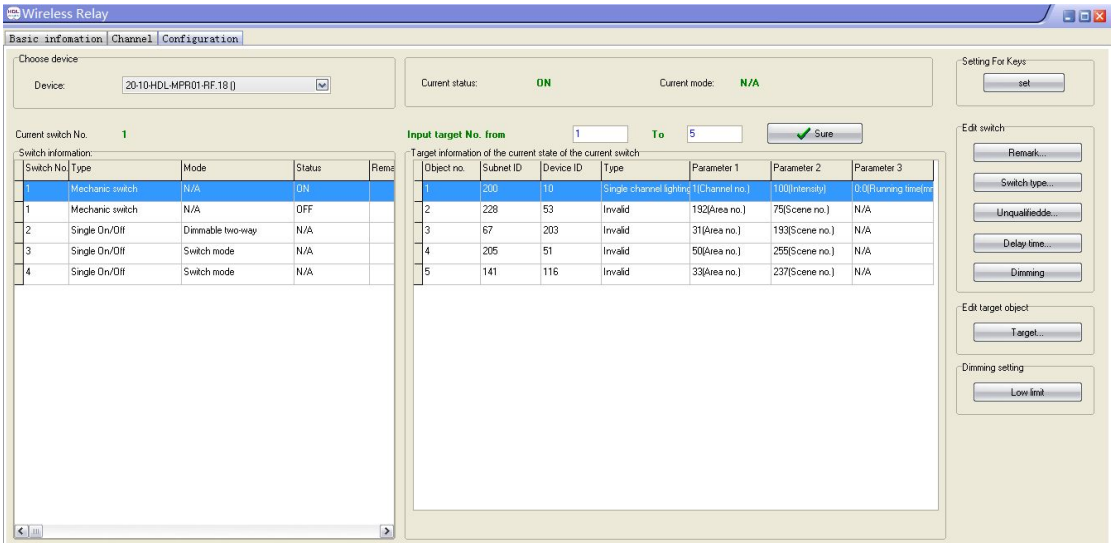
5.2.2 Mains frequency

It supports 50Hz/60Hz

5.2.3 Status restore when power on

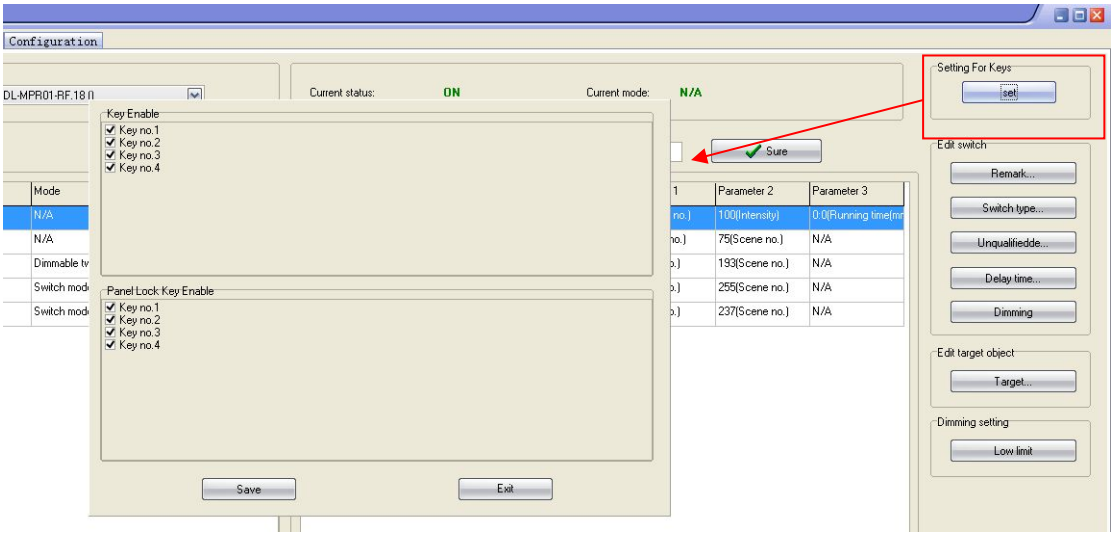
Click ‘Enable’, when power on the wireless relay, it will turn back to the status before power off.

5.3 Configuration



This relay module has 4 dry contact inputs, they have the same functions as wired dry contact module.

5.3.1 Setting For Keys



Key Enable: enable/disable the channels

Panel Lock Key Enable: If be selected, can use panel to lock/unlock this channel

5.3.2 Remark

Do the remark for easy management.

5.3.3 Switch type

Two different Switch types - Momentary and Toggle

You can find two different types of switch from the market.

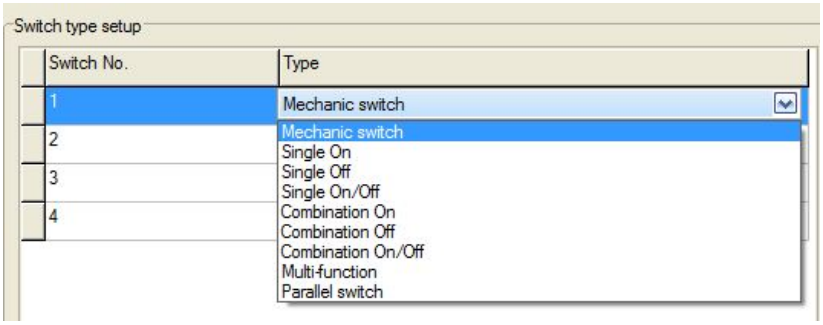
Momentary Switch - When pressed, it is on, when released, it is off.

If “Electrical switch” is selected for this kind of switch, a momentary effect can be produced.

Toggle Switch – It is bi-stable switch, you can set it on or off.

Generally select “Mechanic switch” mode for this kind of switch.

Switch type:



Mechanic Switch

Send out a command (generally the on command, e.g., light on.) when Switch is connected, send out another (generally the off command) when the Switch is

disconnected.

Single on

Assign the Switch can turn on one object only (one channel, or one scene, or one sequence, etc.)

Single off

Assign the Switch can turn off one object only (one channel, or one scene, or one sequence, etc.)

Single on/off

Assign the Switch can turn on/off one object only (one channel, or one scene, or one sequence, etc.)

Combination on

Assign the Switch can turn on multiple objects (channels, scenes, sequence, etc.)

Combination off

Assign the Switch can turn off multiple objects (channels, scenes, sequence, etc.)

Combination on/off

Assign the Switch can turn on/off multiple objects (channels, scenes, sequence, etc.)

Multi-function

Long press – combination off (or dim, if dimming is enabled in the Dry Contact module. Dim the first object only, though.)

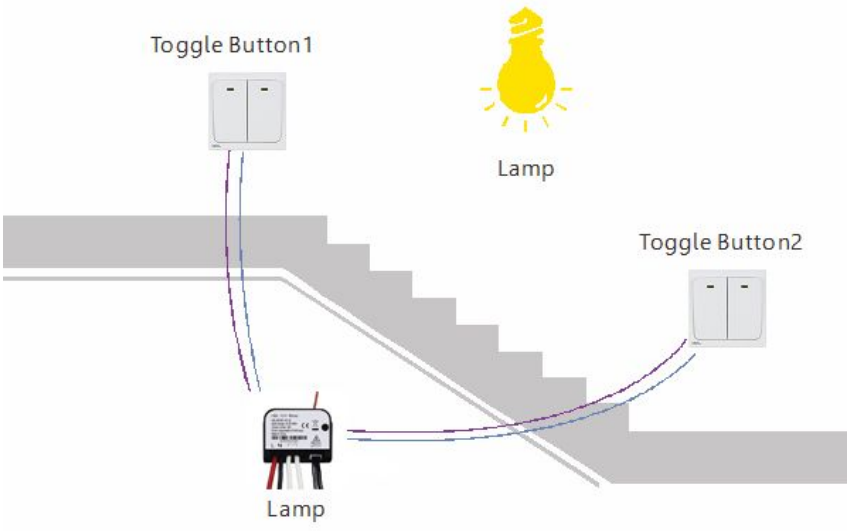
Short press – single on/off

Double click – Combination on

This mode can be used in, maybe, meeting, by double-click all the lighting can be on, by long-press, all lighting can be off, this can avoid mishandling and so it is **more secure.**

Parallel Switch

This key mode is originally designed for retrofit project where the end-users want to implement HDL wireless system, but they want to reserve the existing toggle buttons, the toggle buttons are used to control one public area lighting (e.g., stair lighting) from multiple places.



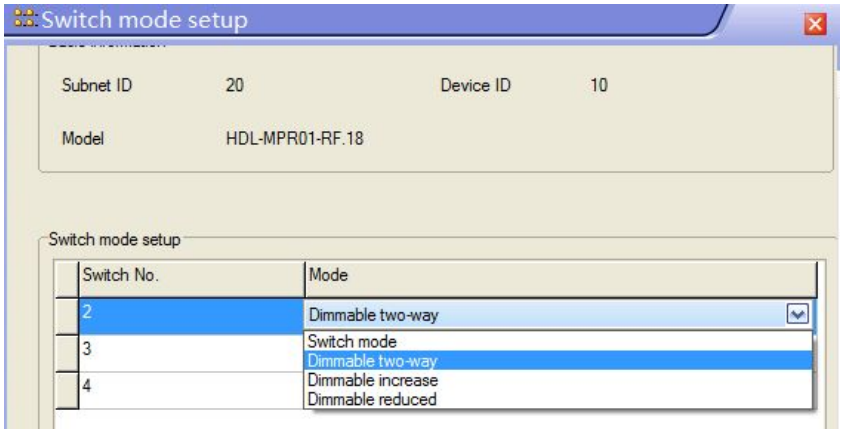
Wiring

Connect the two toggle buttons to two different dry contact channels

Setting

Select “Parallel switch” for both dry contact channels

5.3.4 Unqualifiedde



Each channel can set the mode

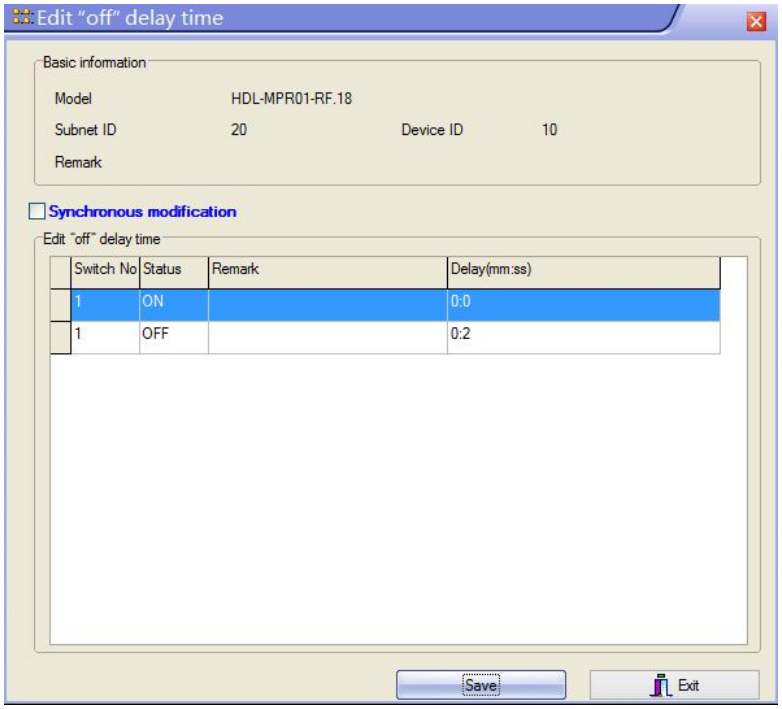
Switch mode: on/off control

Dimmable increase: long press to dim up

Dimmable reduced: long press to dim down

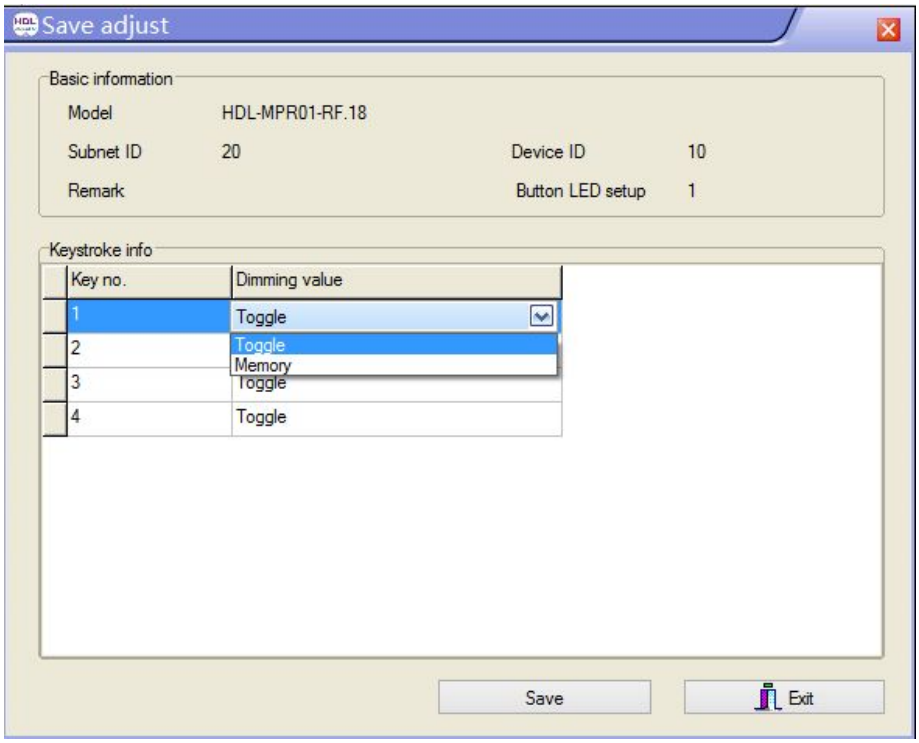
Dimmable two-way: long press to dim up, long press again can dim down

5.3.5 Delay time



Only the “Mechanic switch” switch type has the delay time.

5.3.6 Dimming



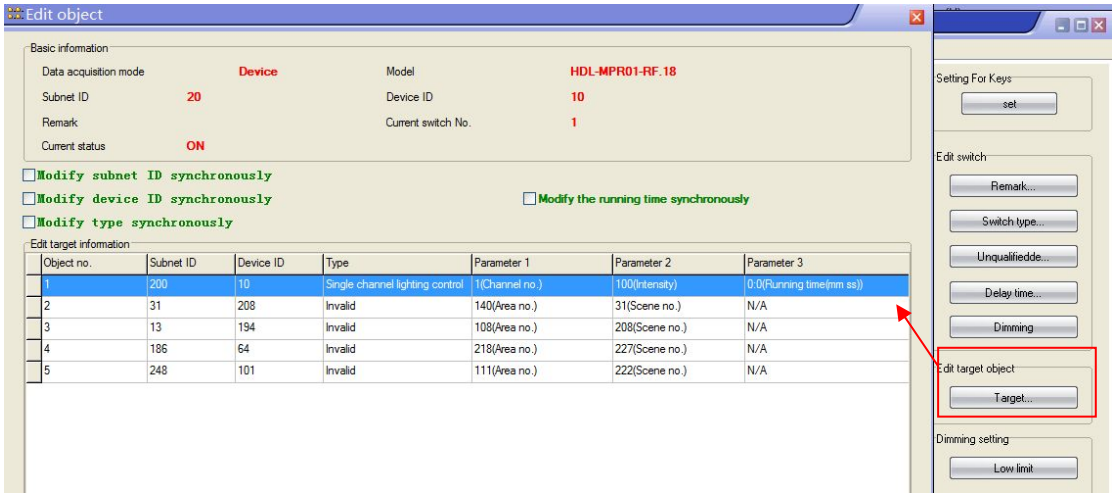
Key no. : channel no./ switch no.

Dimming value:

Toggle- when turn on light, the brightness will go to 100%

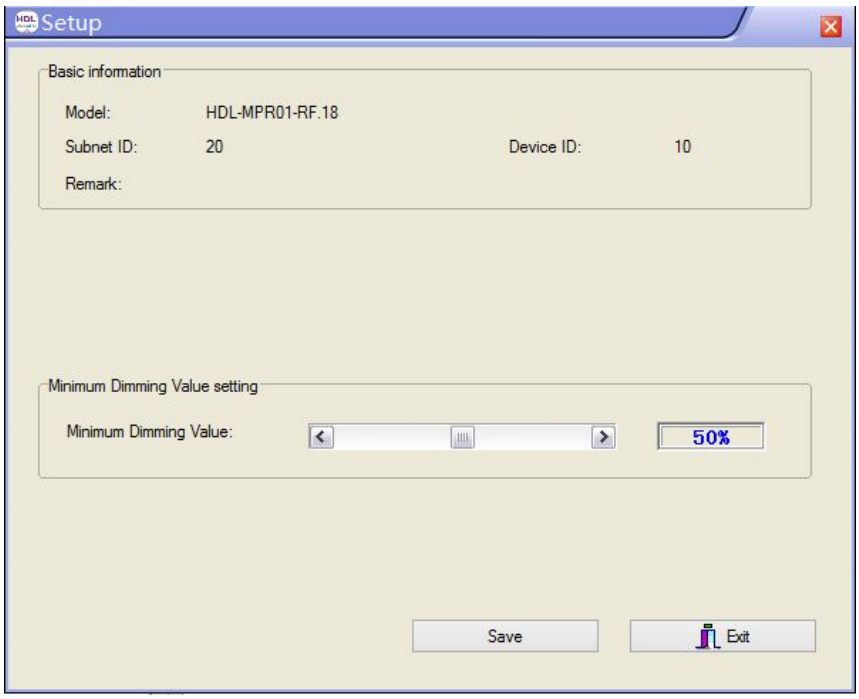
Memory- save the brightness, when turn on light, the brightness will go to last brightness before turn off

5.3.7 Target



Can set each channel's controlled targets, the target's range is 1~20.

5.3.8 Low limit



Set the dimming lower limit.

The Lower limit is useful if you would like to skip the low level segment and dim from a certain level, say 50%. You want to skip it because maybe lower than 50% is impractical for you or maybe the load quality is not so good and trembles when at low level segment.

6. Note