



HDL-MSC06.432
User Manual

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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	2021/09/28

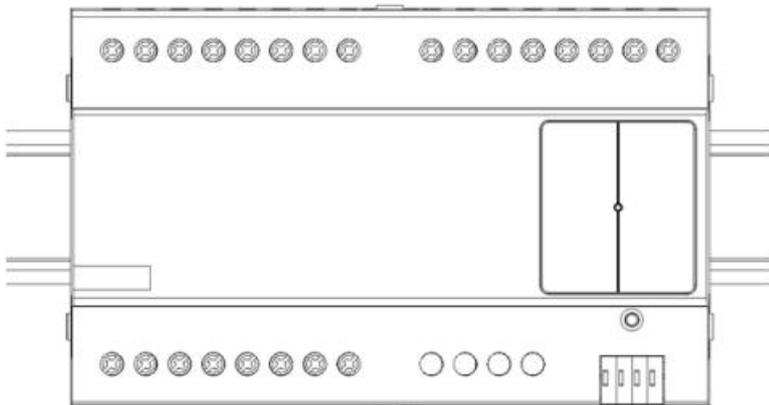
1 Overview

1.1 General Information

1.1.1 Description

6CH Input & Output Module has 6ch relay outputs and supports various kinds of output and input signal. The input types include: Dry contact, voltage, analogy voltage, current and analogy current. The parameters can be set via HDL Buspro Setup Tool

1.1.2 Device Installation



- 35mm DIN rail installation

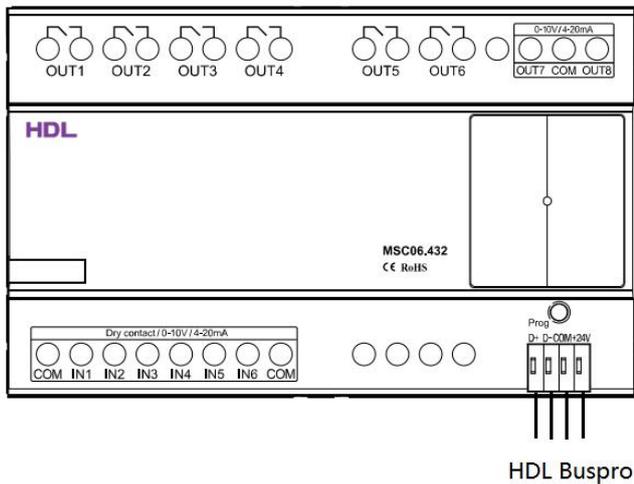
1.2 Functionalities

- Supports input types: Dry contact, Voltage(0~10V DC), Analogy Voltage(0~10V DC), Current (4~20mA), Analogy current(4~20mA).
- Analogy function enables the module to convert the value of voltage and current into other physical quantities, including temperature, luminance, humidity, pressure, etc. in order to control targets
- The input channel can be set as a mechanical switch and an electronic switch.
- Each input channel can be set to control 20 targets.

- Output 1 to Output 6 are 10A relay outputs. Output 7 and Output 8 are 0-10V output or 4mA-20mA output, and can be set by users according to their preference.
- Each input and output channel can be set separately.
- Online upgrade via HDL Buspro Setup Tool.
- Easy programming.

1.3 Connections

Device connection: 6 channel input & output module connect with HDL Buspro port.



2 Software Configurations

2.1 Device Information

ist

	Subnet ID	Device ID	Model	Name	Description(double click)
✓	5	0	HDL-MBUS01P.431		IP Gateway-MQTT
✓	5	1	HDL-MSC06.432		6 channels input and output
✓	5	3	HDL-MCLog.431		Logic timer
✓	5	4	HDL-MP0416.431	0416	4 channels 16A relay I/O
✓	5	5			4 zone dry contact module
✓	5	7			2ch window curtain controller
✓	5	16			Advanced security controller
✓	5	20			Hotel output and input
✓	5	22			4ch 3A leading edge dimmer
✓	5	34			Infrared signal emission
✓	5	59			64 channels DALI controller
✓	5	73			Air-conditioning controller
✓	5	105	HDL-MFH06.432		6ch Floor Heating Module
✓	5	112	HDL-MPTLC43.46-A	enviro	Enviro/4.3" touch panel
✓	5	125	HDL-MPI6R/TII F.43		6 button ON/OFF panel

Modify address

Old SubNet ID: Old Device ID:

New SubNet ID: New Device ID:

Modify Address By MAC

MAC:

Double click Address: Read MAC and modify address. Subnet ID must same with gateway's subnet ID. Device ID must be unique.

Double click Model/Description: Enter to setup page.

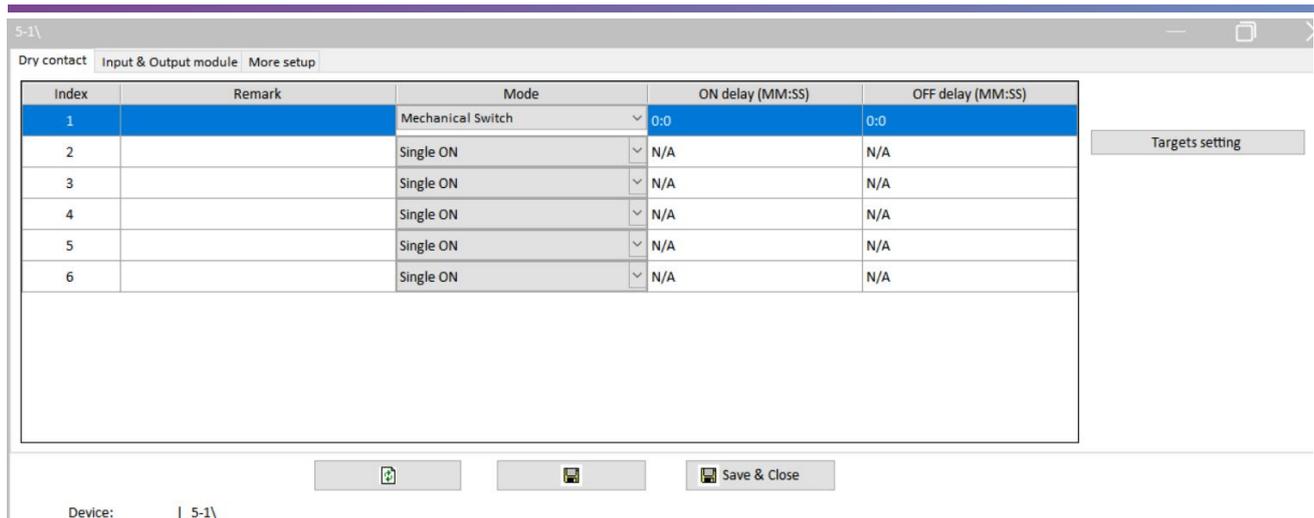
Double click Name: Modify remark of module.

Double click Version: Read firmware version of module.

Double click Hardware Version: Read hardware version of module.

2.2 Dry Contact

Double click Model/Description region, you can enter to the setup page of 6 channel input & output module.



- Remark

We can modify the remark of each channel.

- Mode

There are 7 modes with each channel.

Mechanical 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: If this is assigned the Switch can turn on one target only (one channel, one scene, one sequence, etc.).

Single off: If this is assigned the Switch can turn off one target only (one channel, one scene, one sequence, etc.).

Single on/off: If this is assigned the Switch can turn on/off one target only (one channel, one scene, one sequence, etc.).

Combination on: If this is assigned the Switch can turn on multiple targets (channels, scenes, sequences, etc.).

Combination off: If this is assigned the Switch can turn off multiple targets (channels, scenes, sequences, etc.).

Combination on/off: If this is assigned the Switch can turn on/off multiple targets (channels, scenes, sequences, etc.).

- ON delay

Set the ON delay time for the ON command.

- OFF delay

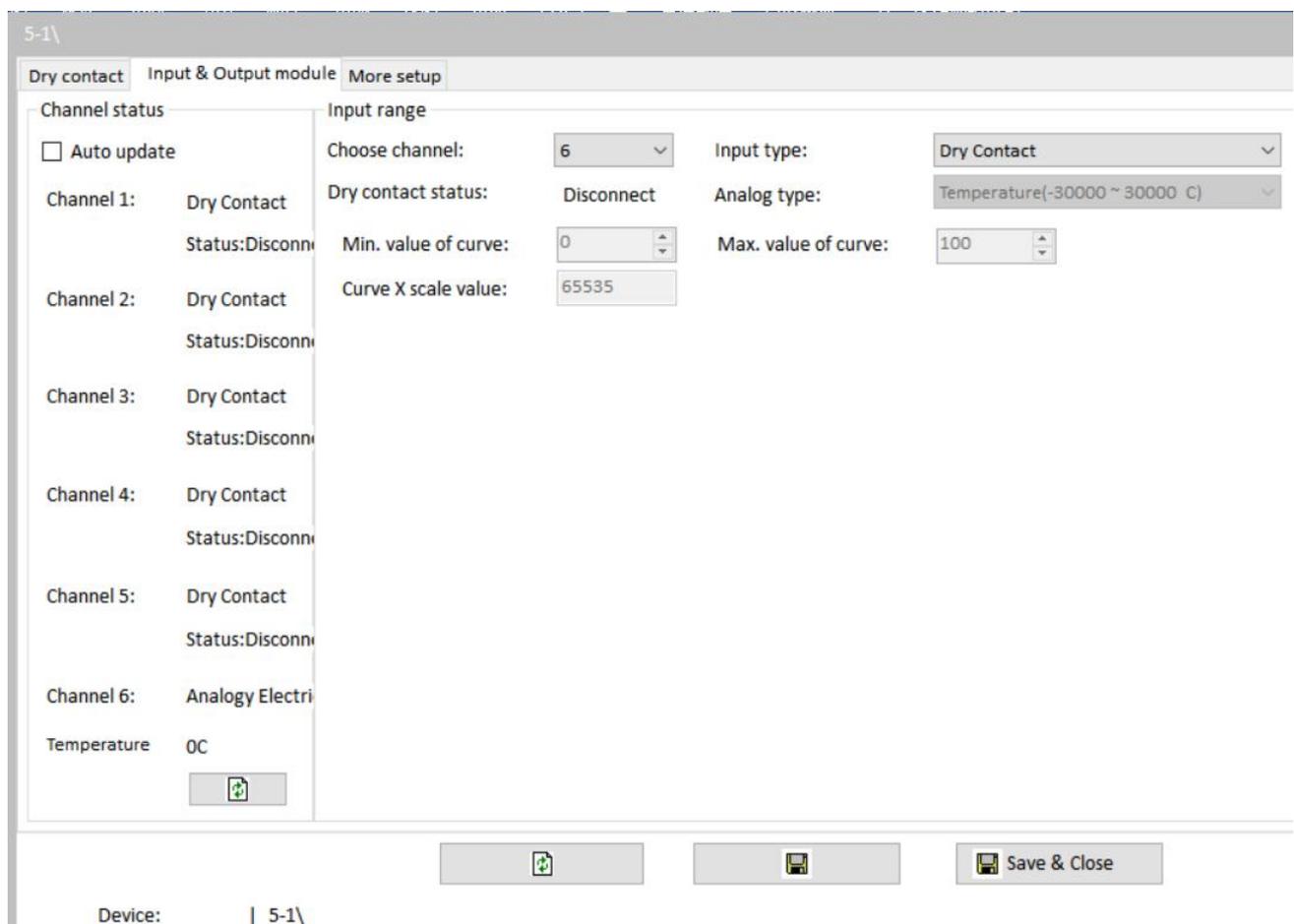
Set the off delay time for the OFF command.

- Targets setting

From this option, we can set the targets to control devices.

2.3 Input & Output Module

From the input & output module page, we can set the input type from this page.



- Channel status

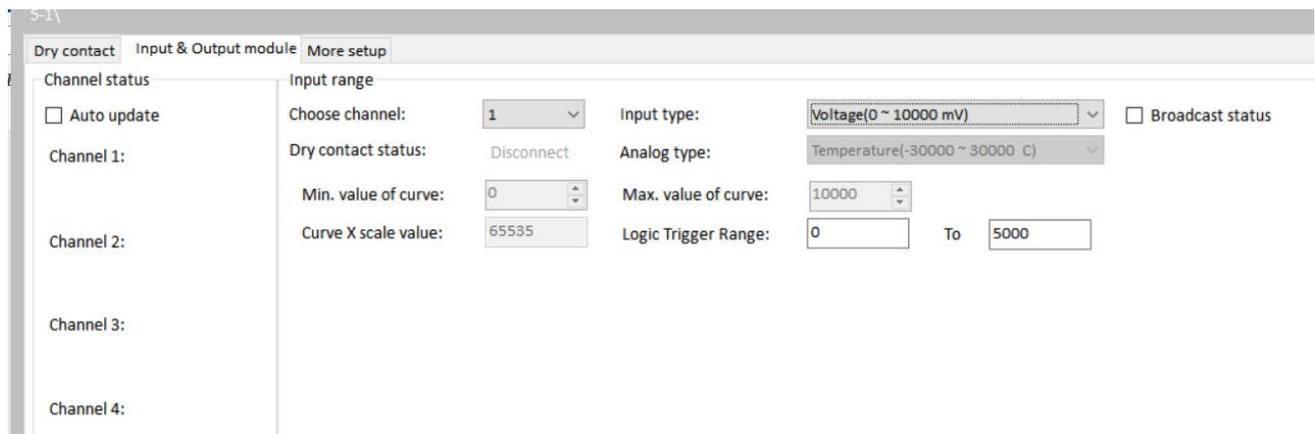
If enable auto date option, we can read the channel status from buspro software automatically.

- Input range

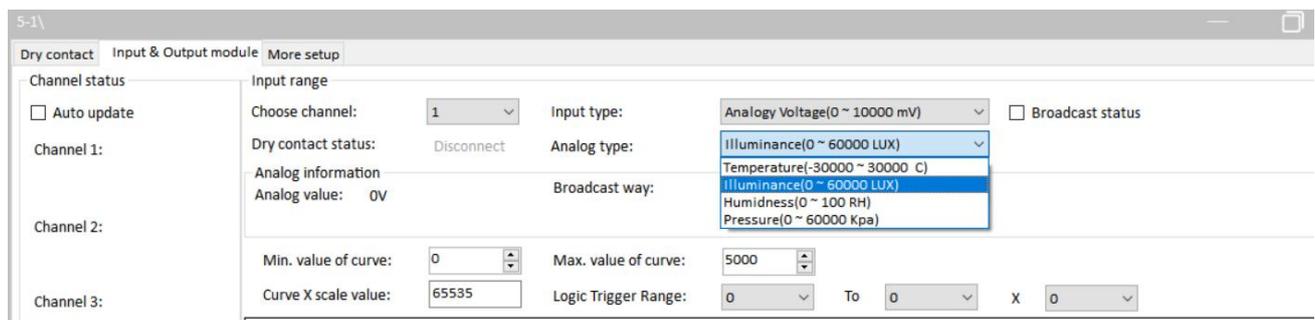
From the area, we can select the channel, and set the input type. The input type can be dry contact, voltage(0-10000mV), analogy voltage(0-10000mV), electricity(4000-20000uA) and analogy electricity(4000-20000uA).

Dry contact: the channel can work as dry contact input.

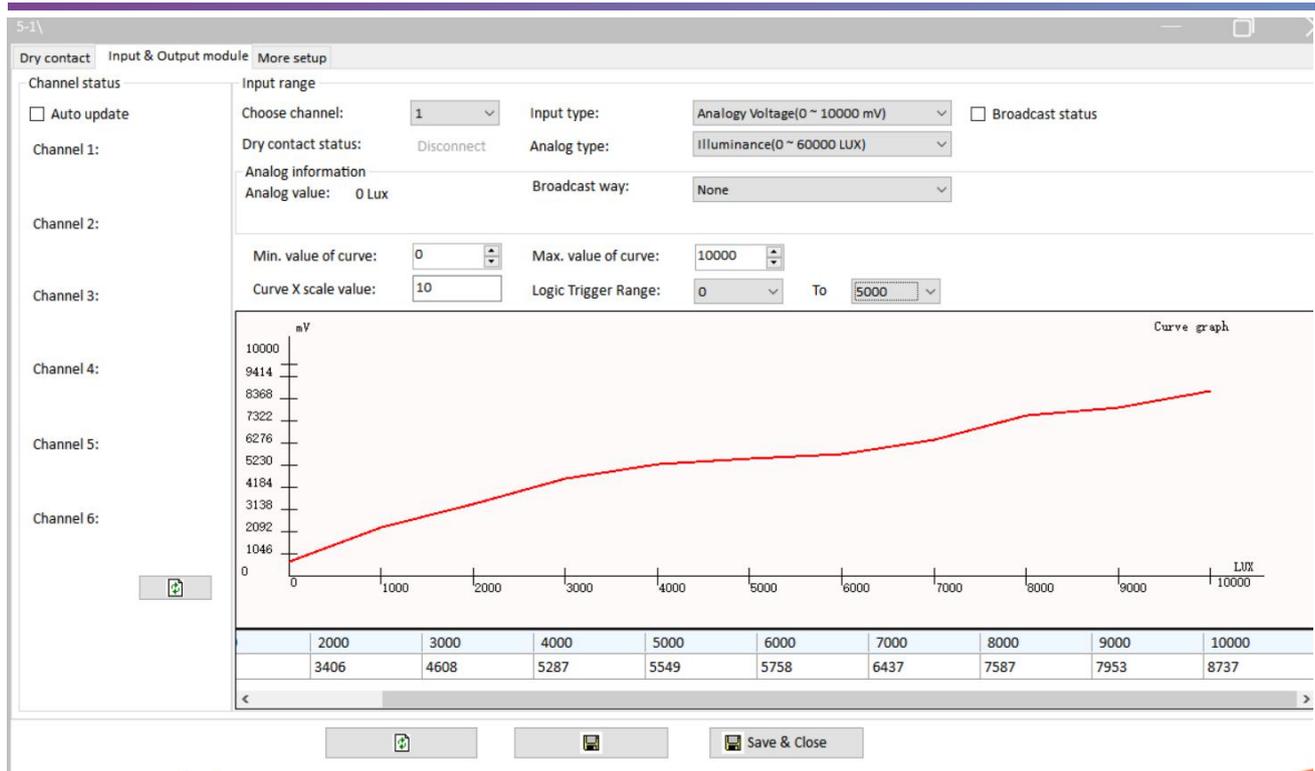
Voltage(0-10000mV): the channel can detect the voltage value, the value is from 0-10000mV. If the logic trigger range is from 0-5000, when the voltage of channel 1 is in this range, then channel 1 can trigger ON target.



Analogy voltage(0-10000mV): the voltage is used to represent the temperature, illuminance, humidness and pressure. The relationship of voltage and the analogy values should be positive correlation relationship.



Now take the illuminance as example.



Select channel 1, the analog type use illuminance, input type use analogy voltage, this is used in the situation when the lux sensor output is voltage.

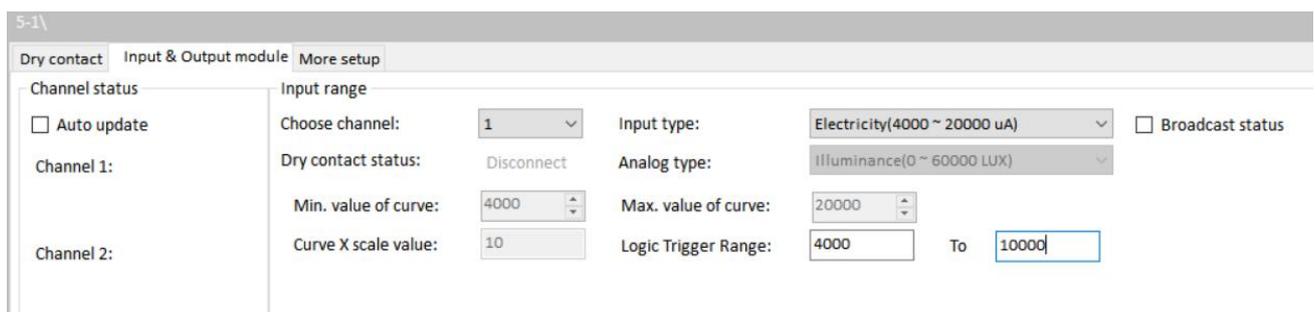
Min value of curve: the minimum value of lux.

Max value of curve: the maximum value of lux.

Curve X scale value: it means the group number that you can fill in the below table, for example, 10 means 10 groups number.

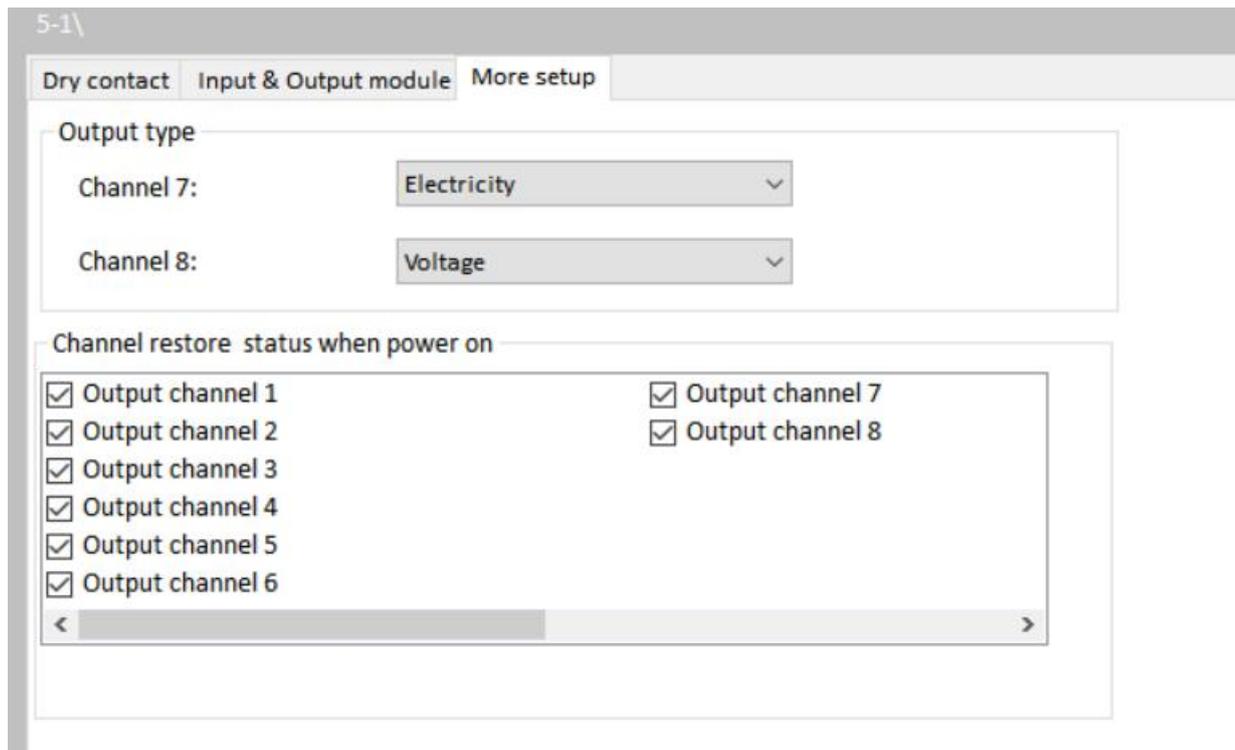
Logic Trigger Range: when the voltage of channel 1 is in this range, then channel 1 can trigger ON target.

Electricity(4000-20000uA): the channel can detect the current value, the value is from 0-10000mV. If the logic trigger range is from 4000-10000, when the voltage of channel 1 is in this range, then channel 1 can trigger ON target.



Analogy electricity(4000-20000uA): the electricity is used to represent the temperature, illuminance, humidness and pressure. The relationship of electricity and the analogy values should be positive correlation relationship.

2.4 More Setup



- Output type

In this area, we can set the channel function for channel 7 and channel 8, electricity and voltage can be selected. We can use the single channel control command to control channel 7 and channel 8. The voltage value is from 0-10V, for example, if we want to output 5V, we can send 50 intensity to the channel. The electricity value is from 4mA to 20mA, if we want to output 12mA, we can send 50 intensity to the channel.

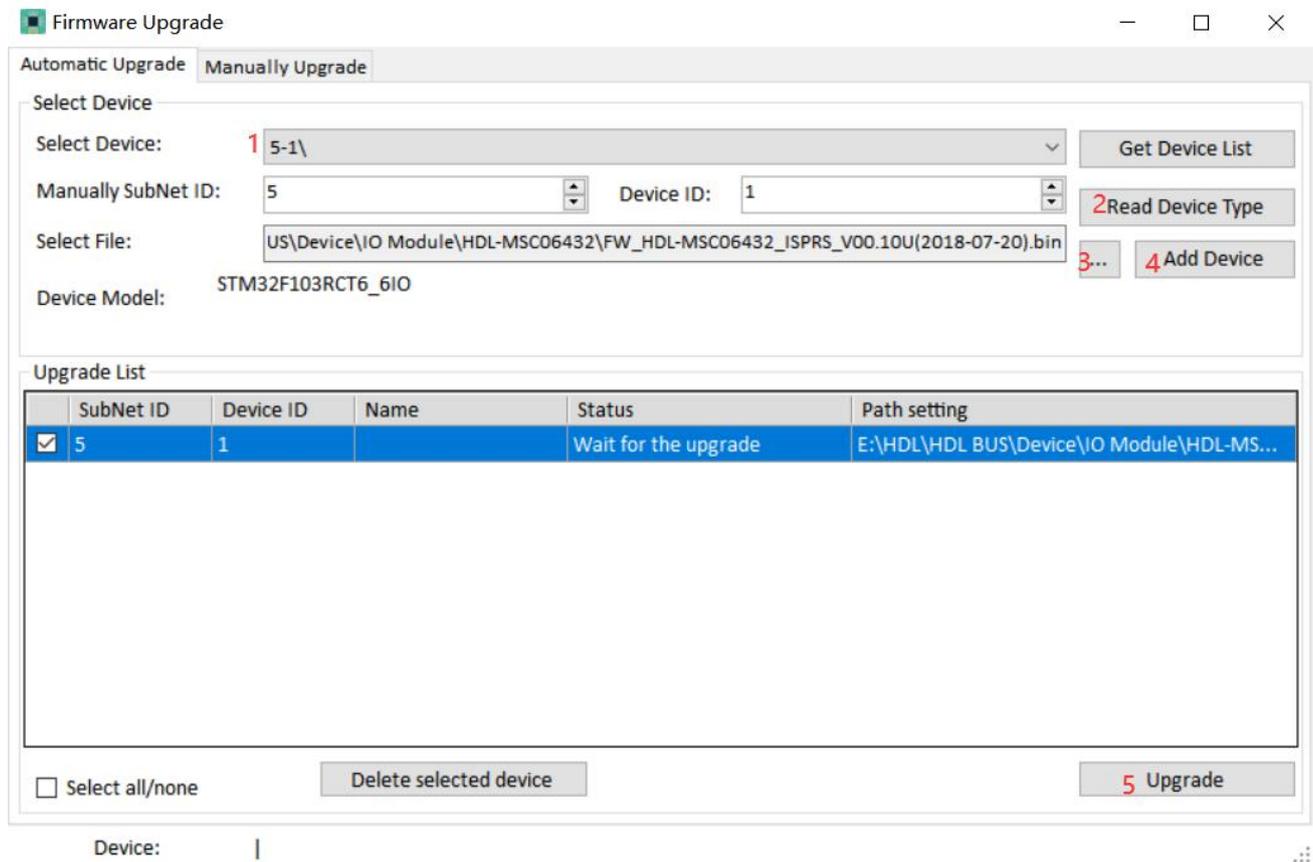
- Channel restore status when power on

We can enable the channel restore function for channel 1 to channel 8.

3 Firmware Upgrade

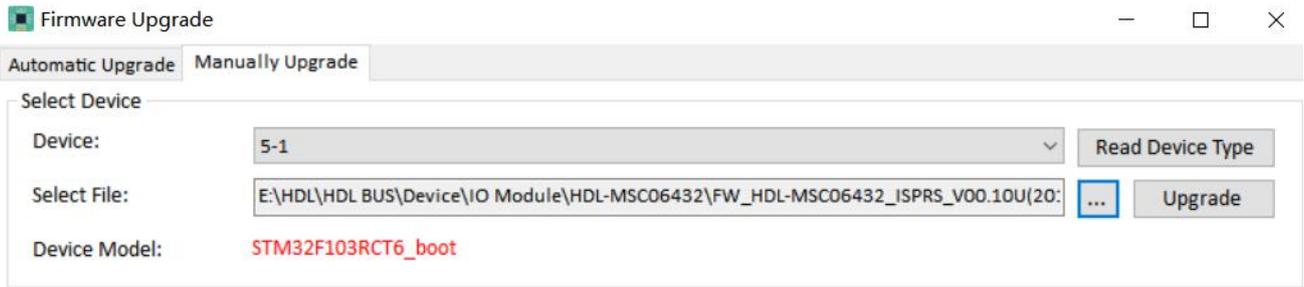
Climate panel supports Automatic Upgrade and Manually Upgrade.

Automatic Upgrade: suitable for searched device.



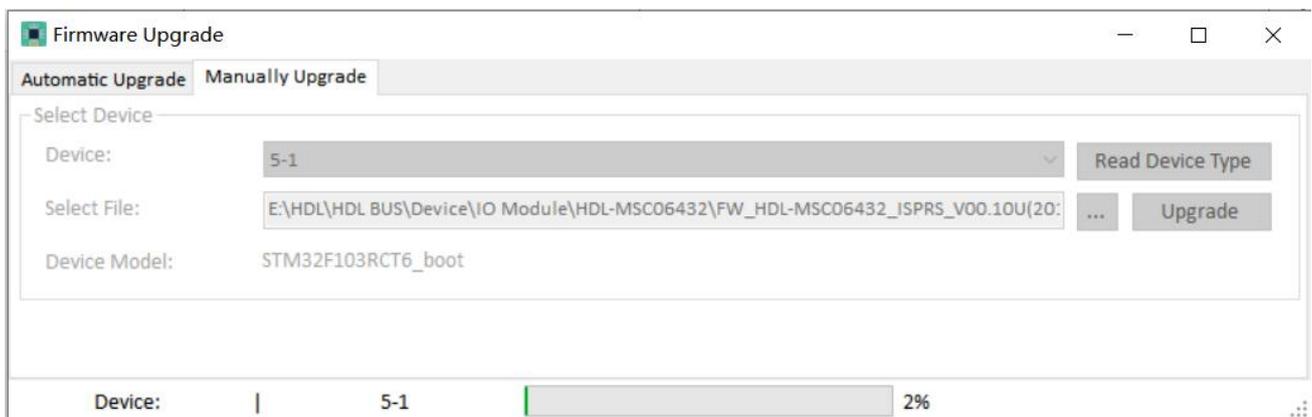
- 1- Select device which need upgrade firmware.
- 2- Read Device Type.
- 3- Select upgrade firmware file for current device.
- 4- Add it to upgrade list
- 5- Upgrade.

Manually Upgrade: You can switch to Manually Upgrade page when upgrade failed, if shows device’s address, then select the upgrade file again and upgrade it.



How to make device enter to manual upgrade mode?

- 1- Go to Manually Upgrade page in software.
- 2- Power off the module.
- 3- Keep pressing prog button before powered on, release the button after being powered on for 2s, then the module will enter upgrade mode..
- 4- Go to manually upgrade page, Software will show its address in Manually Upgrade page by auto, select upgrade file and upgrade it.
- 5- Done



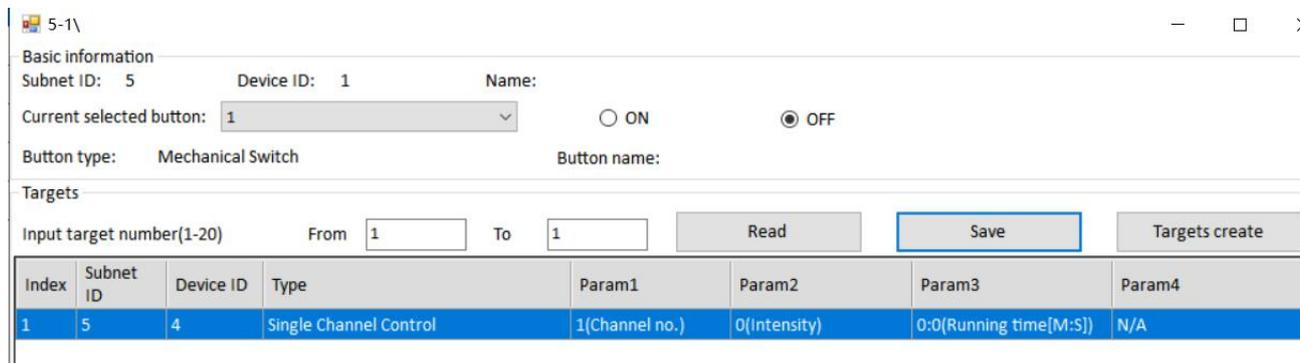
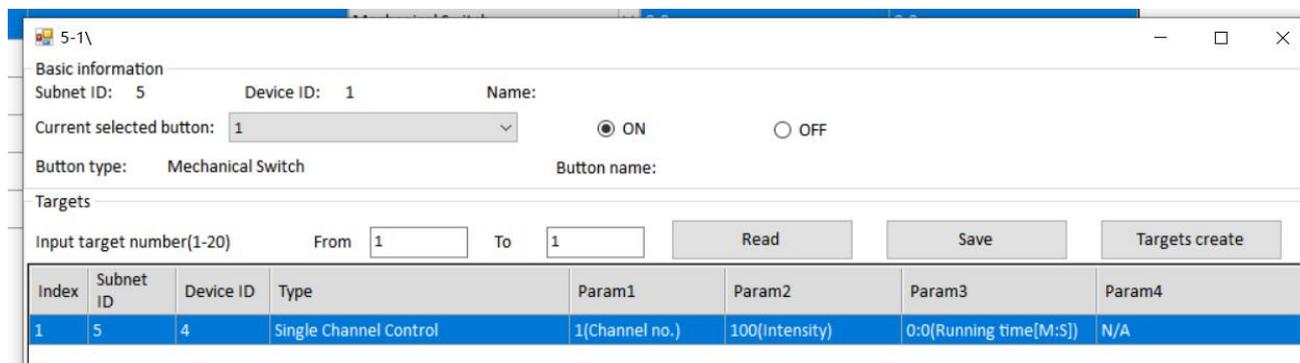
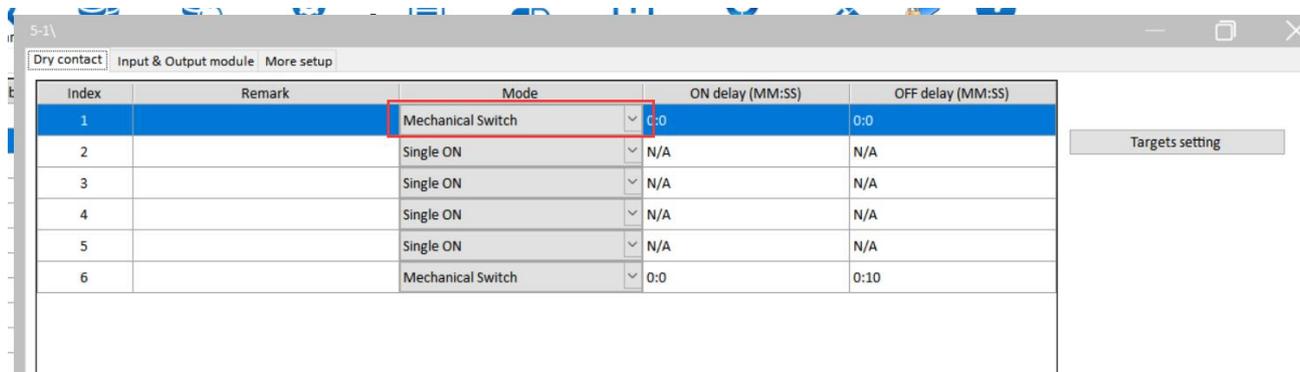
4 Application

Next will take the example of dry contact, voltage(0-10000mV) and analogy voltage(0-10000mV) as example.

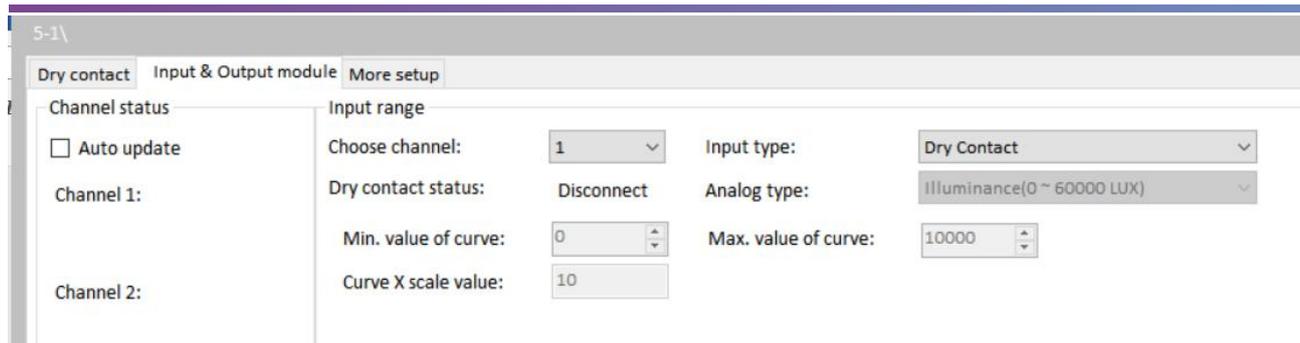
4.1 Dry contact

We want to use the mechanical switch to turn on/off channel 1 of relay 5-4.

1-In the dry contact page, select mechanical switch for channel 1, in the targets setting page, input single channel control command to turn on and turn off the relay channel.



2- In the input & output module page, select channel 1, input type dry contact.

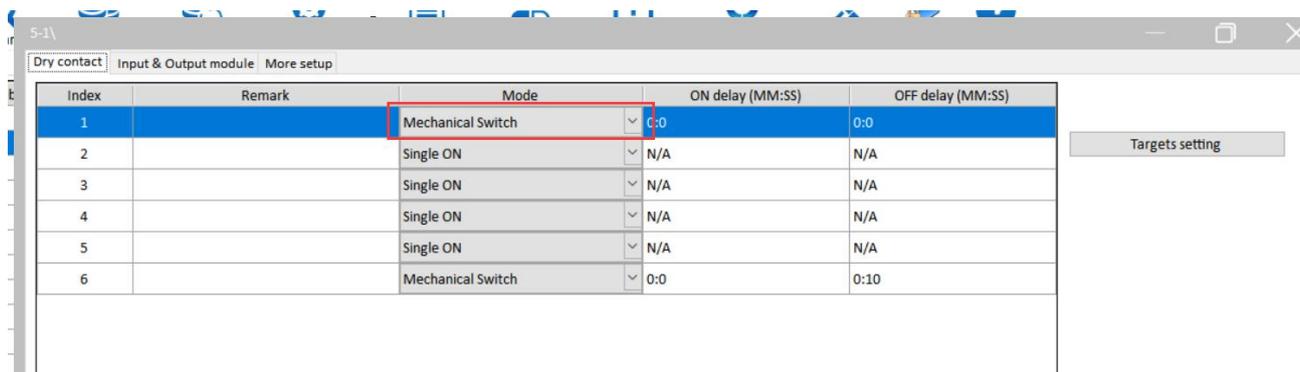


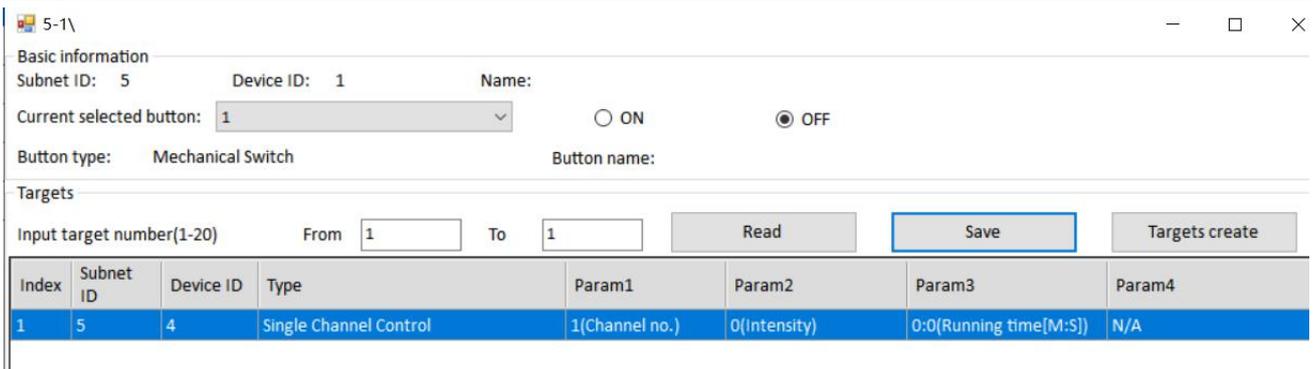
3-Done

4.2 Voltage(0-10000mV)

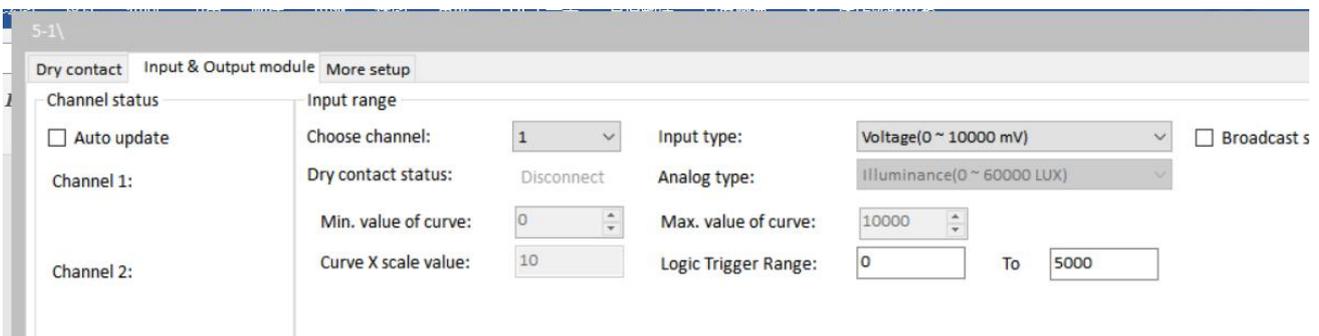
We want to realize below function: when the voltage of channel 1 is from 0-5V, turn on channel 1 of relay 5-4; otherwise, turn off channel 1 of relay 5-4.

1-In the dry contact page, select mechanical switch for channel 1, in the targets setting page, input single channel control command to turn on and turn off the relay channel.





2- In the input & output module page, select channel 1, input type voltage(0-10000mV), logic trigger range is from 0-5000.



3-Done.

4.3 Analogy voltage(0-10000mV)

In this sample, we take the lux sensor as example, the lux sensor detect range is from 0-10000 lux, when it detect different lux, output different voltage, then the relation of voltage and the lux is $y=x$. the sensor is connected with channel 1. When the sensor of channel 1 is from 0-5000lux, turn on channel 1 of relay 5-4; otherwise, turn off channel 1 of relay 5-4.

1- In the dry contact page, select mechanical switch for channel 1, in the targets setting page, input single channel control command to turn on and turn off the relay channel.

5-1\

Dry contact | Input & Output module | More setup

Index	Remark	Mode	ON delay (MM:SS)	OFF delay (MM:SS)
1		Mechanical Switch	0:0	0:0
2		Single ON	N/A	N/A
3		Single ON	N/A	N/A
4		Single ON	N/A	N/A
5		Single ON	N/A	N/A
6		Mechanical Switch	0:0	0:10

Targets setting

5-1\

Basic information

Subnet ID: 5 Device ID: 1 Name:

Current selected button: 1 ON OFF

Button type: Mechanical Switch Button name:

Targets

Input target number(1-20) From 1 To 1

Index	Subnet ID	Device ID	Type	Param1	Param2	Param3	Param4
1	5	4	Single Channel Control	1(Channel no.)	100(Intensity)	0:0(Running time[M:S])	N/A

5-1\

Basic information

Subnet ID: 5 Device ID: 1 Name:

Current selected button: 1 ON OFF

Button type: Mechanical Switch Button name:

Targets

Input target number(1-20) From 1 To 1

Index	Subnet ID	Device ID	Type	Param1	Param2	Param3	Param4
1	5	4	Single Channel Control	1(Channel no.)	0(Intensity)	0:0(Running time[M:S])	N/A

2- In the input & output module page, select channel 1, input type analogy analog voltage(0-10000mV), analogy type illuminance(0-60000lux) min value of curve is 0, max value of curve is 10000, curve X scale value is 10, logic trigger range is from 0 to 50. Input the 10 groups number according the relationship $y=x$.

5-1\

Dry contact | Input & Output module | More setup

Channel status

Auto update

Channel 1:

Channel 2:

Channel 3:

Channel 4:

Channel 5:

Channel 6:

Input range

Choose channel: 1 Input type: Analogy Voltage(0 ~ 10000 mV) Broadcast status

Dry contact status: Disconnect Analog type: Illuminance(0 ~ 60000 LUX)

Analog information

Analog value: 0 Lux Broadcast way: None

Min. value of curve: 0 Max. value of curve: 10000

Curve X scale value: 10 Logic Trigger Range: 0 To 50 X

Curve graph

	2000	3000	4000	5000	6000	7000	8000	9000	10000
	2000	3000	4000	5000	6000	7000	8000	9000	10000

Device: | 5-1\

Save & Close

3-Done