

**HDL<sup>®</sup>**

A modern office interior with a large, open-plan space. The ceiling features a series of parallel wooden slats. The floor is polished and reflects the light. On the right, a large wall displays the HDL logo in a 3D, metallic style. In the center, there is a reception desk. To the left, there is a seating area with a white sofa and a small table. The overall atmosphere is professional and contemporary.

# Logic module HDL-Mclog.431

# Description



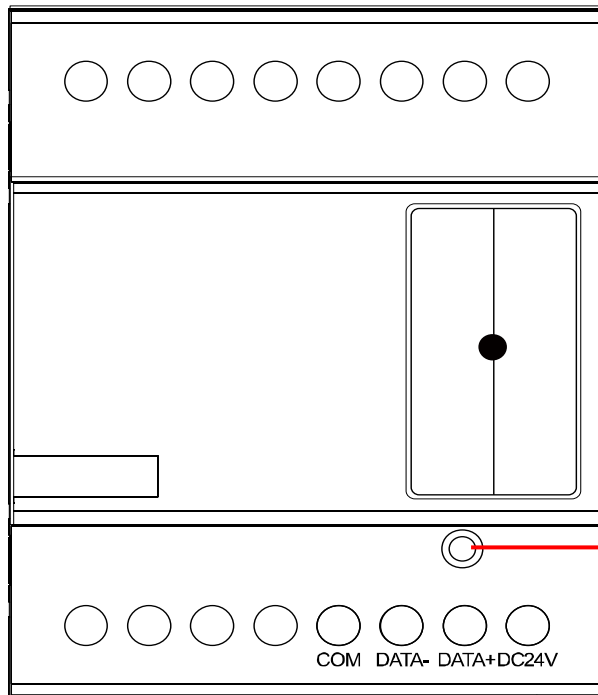
HDL-Mclog.431 is an intelligent programmable logic controller, it can control the system automatically by logic lines such as: scene, channel status, input status, date, time and so on.... And moreover it has real-time clock so you can build up your own schedules too...

# Functions

- Supports 12 logic groups and each group have 20 logic tables.
- Each logic table can set 4 logic input condition and 20 input targets.
- Logical table input condition: Time, Date, Year, Week, Scene working status, external device input status, Wall panel status, and security setting.
- Logic relation: AND, OR, XOR, NAND

# Wiring

it has only HDL interface. It is shown as below



Keeping pressing this button  
for 3s, you can read and  
modify the address by HDL  
software

# Main page

42-90\logic

Logic System setting

☒ Equipment activation

☒ UV switch restore status when power on

Remark:

(1)

(2)

(3)

(4)

(5)

(6)

(7)

(8)

(9)

(10)

(11)

(12)

Create OR table

Create AND table

Create NAND table

Create NOR table

Table: 1

Delay 0s AND

→1 Y/M/D: 2018/2/15

→2 00:00

→3 5

→4

Table: 2

Delay 0s AND

→1 Y/M/D: 2018/2/15

→2 12:00

→3 5

→4

Logic table, one logic block has up to 20 logic tables.  
Double /right click the table, can go to input /output setting page.

Save & Close

# Input conditions

There are many input conditions that will be used to reach any possible logic, each logic table can have maximum of **four input conditions**.

- a) Year type:
- b) Date type:
- e) Universal switch:
- f) Exterior input value:
- g) Device scene status:
- h) Device sequence status:
- i) Exterior universal status:
- j) Device channel status
- k) Device curtain status
- l) Panel status:
- m) Security settings:

The screenshot shows the 'Logic Rules creator' window. On the left, a table lists input conditions:

Index	Description
1	Y/M/D2018/2/15
2	00:00
3	N/A
4	N/A

On the right, the configuration panel includes:

- Name:** (empty text field)
- Control group remark:** (empty text field)
- Relation:** Radio buttons for OR, AND (selected), NAND, NOR.
- Delay:** Three spinners set to 0, followed by (HH:MM:SS).
- ☐ Triggler enable when power on
- Rule:** A dropdown menu is open, showing options: Year type (selected), Date type, Week type, Time type, UV switch, Exterior input value, Device scene status, Device sequence status, Exterior universal status, Device channel status, Device curtain status, Panel status, Security Setting, and Invalid.
- Below the dropdown, there are date pickers: one set to 2014 and another set to 2018年 3月20日.
- A save icon (floppy disk) is at the bottom right.

# System setting

The screenshot displays the 'System setting' window with two main sections:

- Date setting for timer:**
  - Date:** A date picker showing '2000年 1月 1日' and a calendar icon. The day of the week is 'Saturday'.
  - Time:** Three spinners for hours, minutes, and seconds, all set to '0'. The format is '(HH:MM:SS)'.
  - Broadcast time:** An unchecked checkbox.
  - PC time:** A button.
- Geography location setting:**
  - Latitude:** A dropdown menu with '-' selected, followed by two input fields containing '0' and '0'.
  - Longitude:** A dropdown menu with '+' selected, followed by two input fields containing '0' and '0'.
  - Time zone:** A dropdown menu with '(GMT 00)' selected, followed by two input fields containing '00' and '00'. There is also a checkbox for 'Method for prayer time'.
  - Location:** A button.

- A. Date settings for timer:** The module has the clock, you need to set the time settings before using this module.
- B. Geographic location settings:** You can also set the particular point of your place on the surface by setting the latitude (LAT) and longitude (LONG) points, or you can just find your country and city in the system by clicking on “location”.



# Application

**Simple Example:** At 7:00pm-9:00pm, when people come into the room, the light will be on. When no people, delay 3 minutes then light will be off.

**Using modules:** Sensor, Logic module, Lighting control module (Dimmer or Relay)

1: Sensor setting, if the sensor detect the moment, send “UV switch 10 ON”to Logic module. if no moment, send“UV switch10 OFF” to Logic module.(logic number5)

The screenshot displays the HDL software interface for configuring a 42-2\7in1 sensor. The main window is titled "42-2\7in1 sensor" and has tabs for "Sensor setting", "Logic", and "Security setup". The "Logic" tab is active, showing a table of logic settings and a "Current logic information" section.

**Logic Settings Table:**

Logic No.	Remark	Enable	Power off recovery
1	light on	Valid	No action
2	ac 25c	Valid	No action
3	ac 27c	Valid	No action
4	ac off	Valid	No action
5	send to logic	Valid	No action
6		Invalid	No action
7		Invalid	No action
8		Invalid	No action
9		Invalid	No action
10		Invalid	No action
11		Invalid	No action
12		Invalid	No action
13		Invalid	No action
14		Invalid	No action
15		Invalid	No action
16		Invalid	No action
17		Invalid	No action
18		Invalid	No action
19		Invalid	No action
20		Invalid	No action
21		Invalid	No action
22		Invalid	No action

**Current logic information:**

- ☐ Temperature: -20 To -2
- ☐ Brightness: 0 To 0
- ☒ PIR Sensor: Movement
- ☐ Dry contact 1: Disconnect
- ☐ Dry contact 2: Disconnect
- ☐ UV switch(201-248): Switch ID: Remark: ON ☐ Auto off(1-3600s)
- ☐ UV switch(201-248): Switch ID: Remark: OFF ☐ Auto off(1-3600s)
- ☐ Logic: Logic num: 1 Status: False

**True targets configuration:**

Basic information: Subnet ID: 42 Device ID: 2 Name: 7in1 sensor  
Current selected logic: 5-send to logic

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

Index	Subnet ID	Device ID	Type	Param1	Param2	Param3
1	42	90	Universal Switch	10(Switch No.)	ON(Switch Sta...	N/A

**False targets configuration:**

Basic information: Subnet ID: 42 Device ID: 2 Name: 7in1 sensor  
Current selected logic: 5-send to logic

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

Index	Subnet ID	Device ID	Type	Param1	Param2	Param3
1	42	90	Universal Switch	10(Switch No.)	OFF(Switch St...	N/A

True delay: 0 : 0 (M:S) False delay: 0 : 0 (M:S)

Buttons: True targets configuration, False targets configuration, Test, Exit test

## 2: logic module: create a AND table for light on

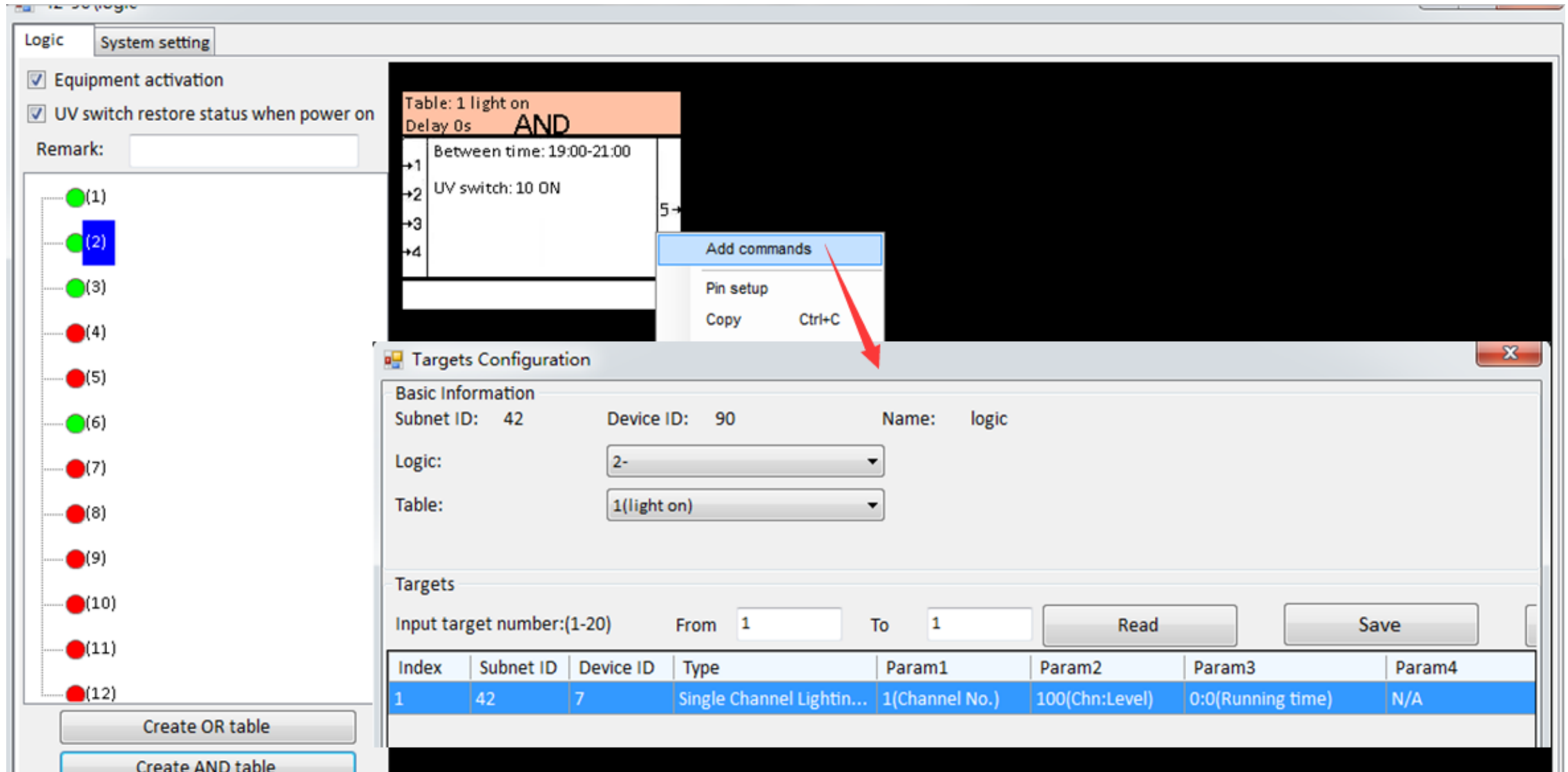
The screenshot shows the HDL Logic Rules creator interface. The main window is titled "42-90\logic" and has tabs for "Logic" and "System setting". The "Logic" tab is active, showing a list of logic blocks (1) through (12). Block (2) is selected, and a red annotation "1: select one logic block" points to it. Below the list are buttons for "Create OR table", "Create AND table" (highlighted with a red "2:"), "Create NAND table", and "Create NOR table".

A "Logic Rules creator" dialog box is open, showing a table with the following data:

Index	Description
1	Between time: 19:00-21:00
2	UV switch: 10 ON
3	N/A
4	N/A

A red annotation "3: double click" points to the "AND" relation in the "Logic Rules creator" dialog box. The "Name" field is set to "light on". The "Control group remark" field is empty. The "Relation" is set to "AND". The "Delay" is set to 0. The "Triggle enable when power on" checkbox is checked. The "Rule" is set to "Time type". The "Time" rule is selected, and the "From Time to" rule is selected, with the time range set to 19:00 to 21:00. A red annotation "4: select Time rule, from 19:00 to 21:00 select UV switch rule, number 10 ON, (this means has movement, see Step1)" points to the "Time" rule selection.

### 3: logic module: output trigger light on



The screenshot displays the HDL Logic module configuration interface. The main window shows a logic table with two conditions: "Between time: 19:00-21:00" and "UV switch: 10 ON". A context menu is open over the table, showing options like "Add commands", "Pin setup", and "Copy". A "Targets Configuration" dialog box is also open, showing basic information and a table of targets.

**Logic Table:**

Table: 1 light on
Delay 0s
AND
Between time: 19:00-21:00
UV switch: 10 ON

**Targets Configuration Dialog:**

Basic Information

Subnet ID: 42    Device ID: 90    Name: logic

Logic: 2-    Table: 1(light on)

Targets

Input target number:(1-20)    From 1    To 1    Read    Save

Index	Subnet ID	Device ID	Type	Param1	Param2	Param3	Param4
1	42	7	Single Channel Lightin...	1(Channel No.)	100(Chn:Level)	0:0(Running time)	N/A

## 4: logic module: create a AND table for light off

The screenshot shows the 'Logic Rules creator' dialog box in the HDL software. The 'Choose table' dropdown is set to '2(light off)'. The table below shows the selected rule:

Index	Description
1	UV switch: 10 OFF
2	N/A
3	N/A
4	N/A

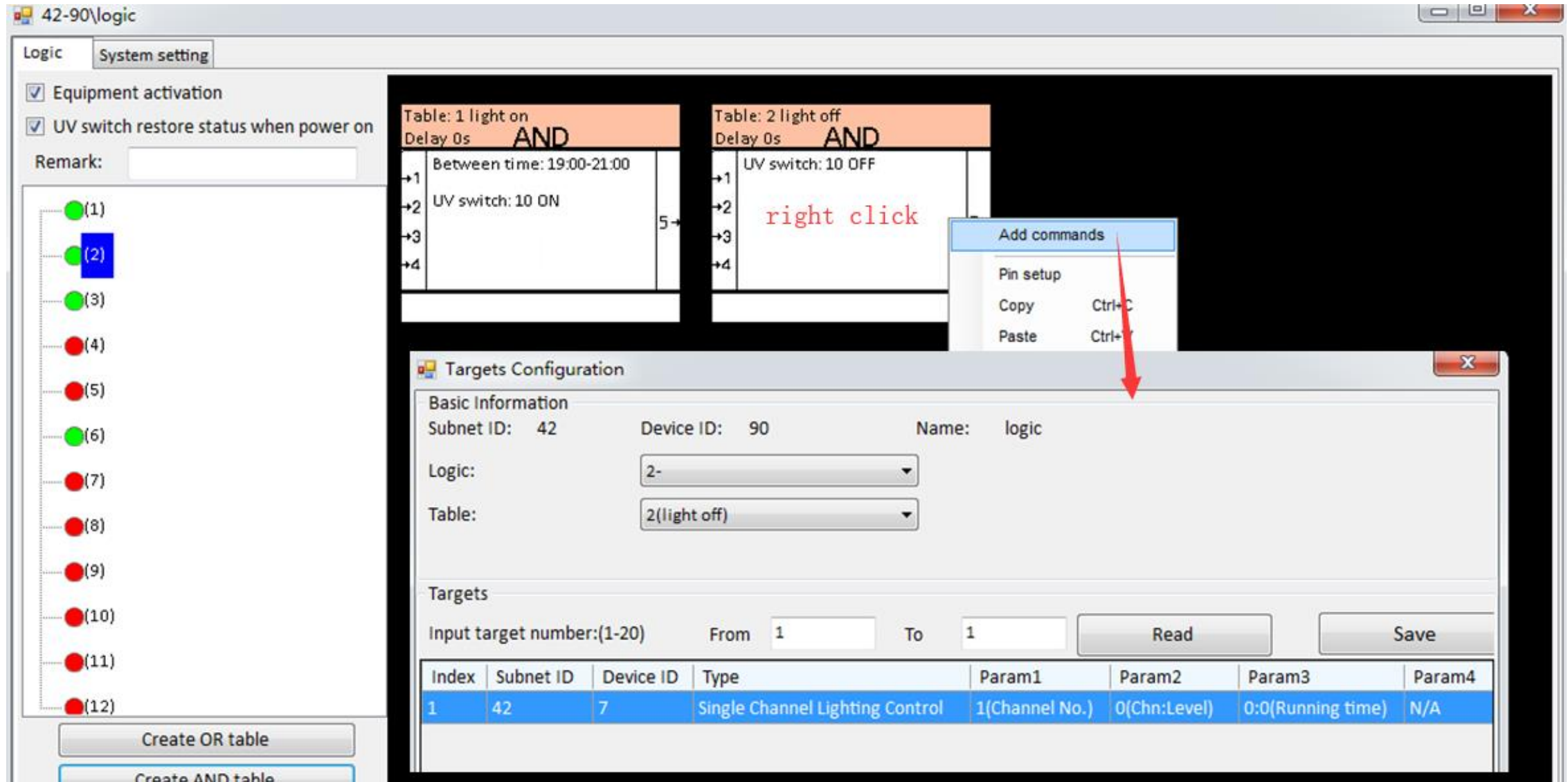
The 'Name' field is 'light off'. The 'Control group remark' field is empty. The 'Relation' is set to 'AND'. The 'Delay' is set to '0 : 3 : 0' (HH:MM:SS). The 'Triggle enable when power on' checkbox is unchecked. The 'Rule' is set to 'UV switch' and 'Action Every Time' is checked. The 'UV Switch' is set to '10' and the 'Status' is set to 'OFF'.

Red annotations provide additional context:

- '2:double click' points to the '2(light off)' entry in the 'Choose table' dropdown.
- '3:delay time:3minutes. after the delay will trigger the output' points to the '3' in the delay field.
- '4:select UV switch rule, number 10 OFF (this means no movement, see Step1)' points to the '10' in the 'UV Switch' field.

Buttons at the bottom left include 'Create OR table', '1 Create AND table', 'Create NAND table', and 'Create NOR table'.

## 5: logic module: output trigger light off



The screenshot displays the HDL Logic module configuration interface. The main window shows two logic tables. Table 1 is 'light on' with conditions 'Between time: 19:00-21:00' and 'UV switch: 10 ON'. Table 2 is 'light off' with condition 'UV switch: 10 OFF'. A context menu is open over Table 2, showing options like 'Add commands', 'Pin setup', 'Copy', and 'Paste'. A red arrow points from the 'Add commands' option to the 'Targets Configuration' dialog box. The dialog box shows 'Basic Information' with Subnet ID 42, Device ID 90, and Name 'logic'. It also shows 'Targets' configuration with a table of targets.

**Logic Module Configuration**

**Table 1: light on**

Delay 0s AND

→1 Between time: 19:00-21:00

→2 UV switch: 10 ON

→3

→4

**Table 2: light off**

Delay 0s AND

→1 UV switch: 10 OFF

→2 right click

→3

→4

**Targets Configuration**

Basic Information

Subnet ID: 42 Device ID: 90 Name: logic

Logic: 2-

Table: 2(light off)

Targets

Input target number:(1-20) From 1 To 1 Read Save

Index	Subnet ID	Device ID	Type	Param1	Param2	Param3	Param4
1	42	7	Single Channel Lighting Control	1(Channel No.)	0(Chn:Level)	0:0(Running time)	N/A

**HDL<sup>®</sup>**

Serious about smart buildings.