

# www.Kama-Labs.com

(Assembly instructions and latest firmware you can find on my website)

## ALISA

Made my own hands 😊

# Thanks for purchase!!!

### Features:

- \* 6 **IN-18** Russian NIXIE tubes (made in 1970-80)
- \* 2 IN-3 NIXIE separators (show am/pm and on/off of alarm)
  - \* 32bit STM32F100C8 processor
    - \* 15 parameters
    - \* 12/24 hours mode
    - \* 1 Alarm
- \* Turn off at night (increase lifetime of tubes in twice!)
  - \* Turn off leading zero
  - \* Smooth PCB routing
- \* Countdown timer 99days:23hour:59mins:59sec
  - \* Full remote control
  - \* Anti-cathode poisoning system
  - \* USB connection to PC (for update firmware)
- \* Double **Multicolour** led glow (independent random color leds and **RGB** leds under each tube)
  - \* Adjustable brightness of **RGB** and AUTO leds
- \* **RGB** led (6 colors of backlight or autochange color mode)
  - \* Adjustable high-voltage block. 150-190 volts.
    - \* 10 modes of switch digits
    - \* 2 modes of separator tubes
    - \* **IN-18** tubes works in static mode
  - \* 6 Russian chips K155ID1 in sockets

## \* Thermometer

\* Correction of temperature

\* Accurate to +/- 1 minute/year

\* Setup of clock accuracy

\* Date in format DD.MM.YY or MM.DD.YY

\* Backup battery. Data is not lost when power off

\* 3 button - Time, Alarm, Color.

\* Power source - DC 12V barrel plug 5.5mm/2.1mm ( "+" inside, "-" outside)

\* Consuming current - no more 500mA

\* Height of pcb with elements only 13 mm

\* Noiseless work

**DANGER! HIGH VOLTAGE! (~165 volts)**

| № | Parameter                | Value   |
|---|--------------------------|---|
| 1 | 12/24 time format        | 0 - 12h time format<br>1 - 24h time format  |
| 2 | Hi.Hour tube fading      | 0 - disable fading<br>1 - enable  |
| 3 | Show time mode           | 0 - hard mode<br>1 - soft mode №1<br>2 - soft mode №2<br>3 - random mode №1<br>4 - random mode №2<br>5 - slot machine<br>6 - wave<br>7 - fade one by one<br>8 - shift<br>9 - run<br>10 - all effects one by one |
| 4 | Backlight mode           | 0 - all leds off<br>1..5 - brightness<br>6 - AUTO brightness<br>7 - AUTO brightness + turn off at night<br>8 - turn off at night  |
| 5 | Show current temperature | 0 - disable<br>1 - every 2 minutes<br>2 - every 5 minutes   |
| 6 | Work of separators       | 0 - disable<br>1 - work together<br>2 - work alternately  |

| 7          | Show current date                               | 0 - off<br>1 - every 2 minutes<br>2 - every 5 minutes  |            |               |   |   |   |    |   |   |   |    |    |     |    |    |   |   |   |   |    |     |
|------------|---|--|------------|---------------|---|---|---|----|---|---|---|----|----|-----|----|----|---|---|---|---|----|-----|
| 8          | Correction of temperature coefficient           | 0 .. 9<br>Current temp. - temp.coeff. = real temperature<br><table border="1" data-bbox="746 421 1497 913"> <thead> <tr> <th>Temp.coeff</th> <th>Current temp.</th> </tr> </thead> <tbody> <tr><td>0</td><td>0</td></tr> <tr><td>1</td><td>-1</td></tr> <tr><td>.</td><td>.</td></tr> <tr><td>.</td><td>..</td></tr> <tr><td>10</td><td>-10</td></tr> <tr><td>11</td><td>+1</td></tr> <tr><td>.</td><td>.</td></tr> <tr><td>.</td><td>.</td></tr> <tr><td>19</td><td>+10</td></tr> </tbody> </table> | Temp.coeff | Current temp. | 0 | 0 | 1 | -1 | . | . | . | .. | 10 | -10 | 11 | +1 | . | . | . | . | 19 | +10 |
| Temp.coeff | Current temp.                                   |  |            |               |   |   |   |    |   |   |   |    |    |     |    |    |   |   |   |   |    |     |
| 0          | 0   |  |            |               |   |   |   |    |   |   |   |    |    |     |    |    |   |   |   |   |    |     |
| 1          | -1  |  |            |               |   |   |   |    |   |   |   |    |    |     |    |    |   |   |   |   |    |     |
| .          | .   |  |            |               |   |   |   |    |   |   |   |    |    |     |    |    |   |   |   |   |    |     |
| .          | ..  |  |            |               |   |   |   |    |   |   |   |    |    |     |    |    |   |   |   |   |    |     |
| 10         | -10   |  |            |               |   |   |   |    |   |   |   |    |    |     |    |    |   |   |   |   |    |     |
| 11         | +1  |  |            |               |   |   |   |    |   |   |   |    |    |     |    |    |   |   |   |   |    |     |
| .          | .   |  |            |               |   |   |   |    |   |   |   |    |    |     |    |    |   |   |   |   |    |     |
| .          | .   |  |            |               |   |   |   |    |   |   |   |    |    |     |    |    |   |   |   |   |    |     |
| 19         | +10   |  |            |               |   |   |   |    |   |   |   |    |    |     |    |    |   |   |   |   |    |     |
| 9          | Clock accuracy correction                       | 0 .. 9<br>Bigger value - slowly clock  |            |               |   |   |   |    |   |   |   |    |    |     |    |    |   |   |   |   |    |     |
| 10         | Date format                                     | 0 - DD.MM.YY<br>1 - MM.DD.YY   |            |               |   |   |   |    |   |   |   |    |    |     |    |    |   |   |   |   |    |     |
| 11         | Temperature format                              | 0 - Celsius<br>1 - Fahrenheit  |            |               |   |   |   |    |   |   |   |    |    |     |    |    |   |   |   |   |    |     |
| 12         | Brightness of BOTTOM LEDs                       | 0 .. 6   |            |               |   |   |   |    |   |   |   |    |    |     |    |    |   |   |   |   |    |     |
| 13         | Firmware type                                   | 0 - for IN-14, IN-4, IN-16, IN-8 and IN-18 nixie clocks<br>1 - for IV-9 Numitron clock   |            |               |   |   |   |    |   |   |   |    |    |     |    |    |   |   |   |   |    |     |
| 14         | Anti-cathode poisoning<br>For NIXIE clocks only | 0 - Off<br>1 - Every 1 minute<br>2 - Every 5 minutes<br>3 - Every 10 minutes   |            |               |   |   |   |    |   |   |   |    |    |     |    |    |   |   |   |   |    |     |
| 15         | Night fading                                    | 0 - Off<br>1 - On  |            |               |   |   |   |    |   |   |   |    |    |     |    |    |   |   |   |   |    |     |

## Button function:

Short click = ~0.5 sec.

Long click = ~1 sec

**First button - Time:** Short click - on/off alarm (indicates by KM separators tubes) Long click - time setup

**Second button - Alarm:** Short click - parameters mode Long click - alarm setup

**Third button - Color:** Short click - change color of backlight or disable leds Long click - date setup

If you will press and hold one button and then will press second:

1 + 2 = show current temperature

1 + 3 = show current date

2 + 3 = test mode for checking nixie tubes

3 + 1 = show countdown timer

### How to set time?

- 1) Press and hold 1 button ~1 sec
- 2) Hours tubes start to blink
- 3) Press 1 button for increment value and 2 button for decrement value
- 4) Press 3 button for go to next value
- 6) Seconds will reset to "00" if you will press 1 or 2 button
- 7) Press 3 button for exit from setting time mode

### How to set alarm?

Similarly. However, use 2 button for enter into setting mode (press and hold ~1 sec).

### How to change parameters?

- 1) Press 2 button for enter into parameters mode
- 2) You will see number of parameter (1) and value of parameter (0):  
1\_ : \_ \_ : \_ 0

3) Press **1 button** for increment value and **2 button** for decrement value

4) Press **3 button** for go to next parameter

## How to set current date?

1) Press and hold **3 button** for 1 sec

2) You will see date in DD.MM.YY format

3) Press **1 button** for increment value and **2 button** for decrement value of days in month

4) Press **3 button** again for set the month and year

## How to change color of backlight?

Press **3 button** to change color or to set autochange color.

## How to set countdown timer?

Press **3 + 1** for show countdown timer. Here buttons have next function:

**1** - Short click – on/off timer

**Long click** – exit

**2** - Short click – DD:HH:MM or HH:MM:SS time format

**Long click** – timer setup

**3** - Short click – reset to previous timer value

In timer mode **first** separator show DD:HH:MM / HH:MM:SS time format, **second** separator show on/off alarm.

For set countdown timer push **2 button** for 1 sec. You will enter in timer setup mode and you will see:

Days : Hours : Months

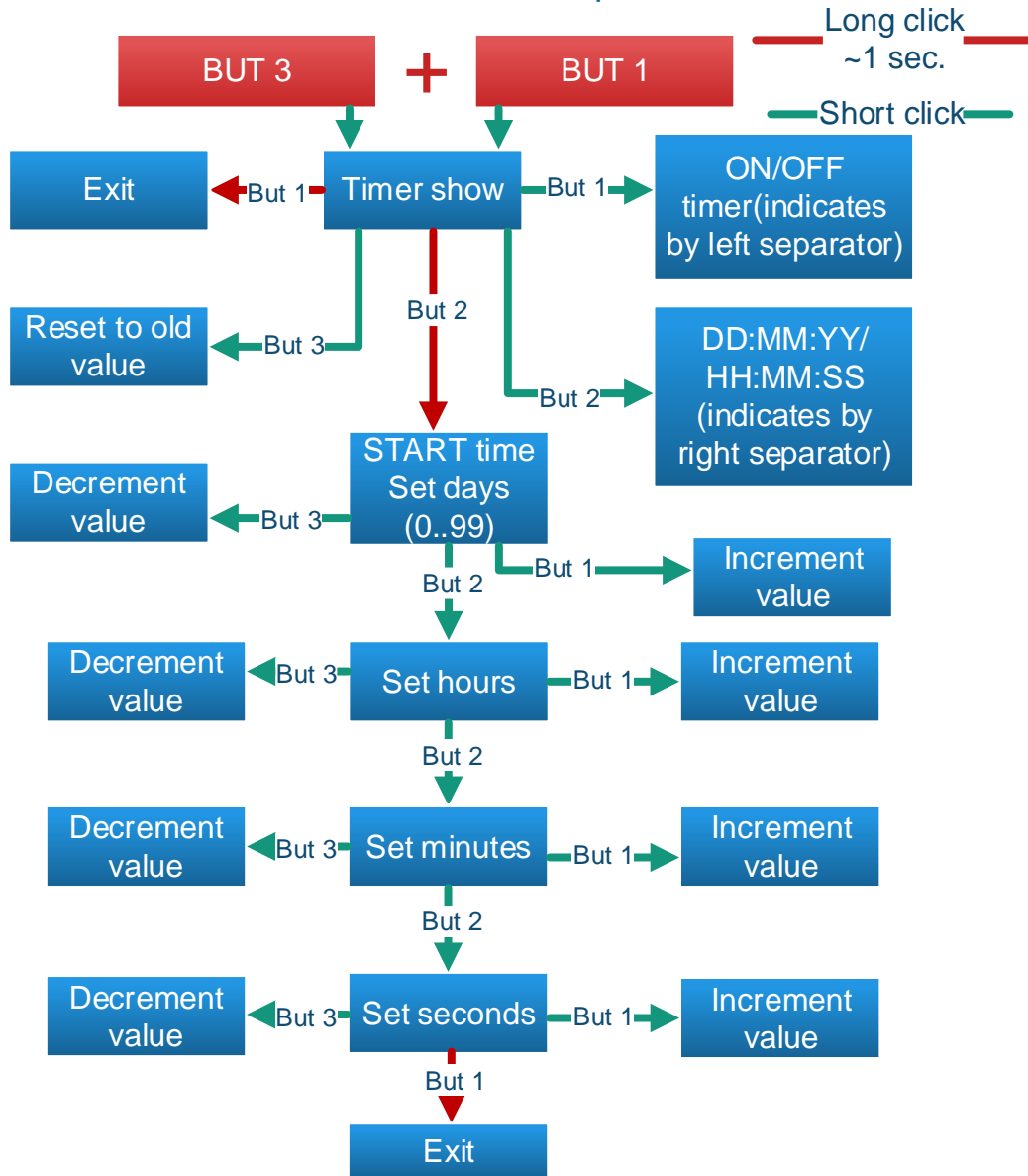
00 : 00 : 00

Use **1 button** for increase value and **3 button** for decrease value. Push **2 button** for change position. For set seconds you will see next format:

\_\_ :SS: \_\_

1 \_ :00: \_ 1

Press and hold Button 3 and then press Button1



### Remote control in timer mode

| Button | Action                        |
|--------|-------------------------------|
| OK     | On/off timer                  |
| ▶      | DD:HH:MM / HH:MM:SS           |
| ◀      | Reset to previous timer value |
| 1      | Timer setup                   |
| 7      | Exit                          |

### How to make HARD RESET if something wrong?

When your clock starts, you hear short melody. If you will press 1 button for 1-2 second in this moment, clock will reset all your setting.

You will hear p-i-i-i-i-i-p p-i-p p-i-p. That's mean HARD RESET is done.

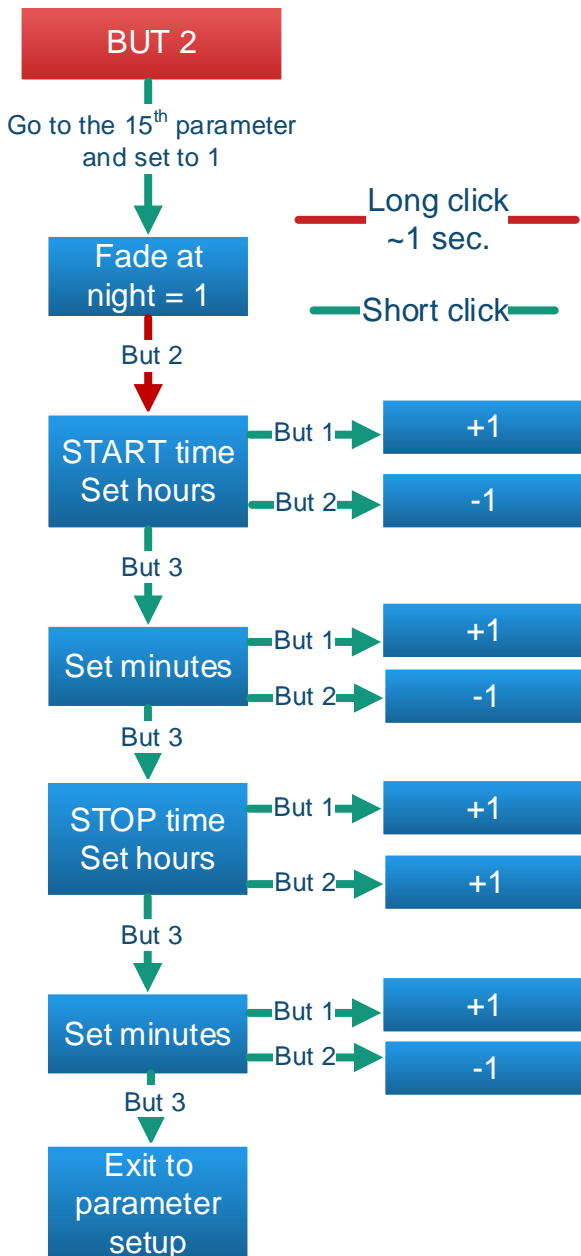
## How to set night fading?

Set 15<sup>th</sup> parameter to 1 and press **2 button** for ~1sec and you will enter into setup. You will hear b-i-i-i-p and will see:

00 : \_\_ : \_\_

Now, you need set time of START fading. Use **1** and **2 button** for increase/decrease value and **3 button** for change digit. After that, you need to set time of STOP fading similarly.

Example: you go to sleep at 11:10PM and get up 6:30AM. So, you need to set START time as 23:10 and STOP time as 6:30.



## How to use remote control?

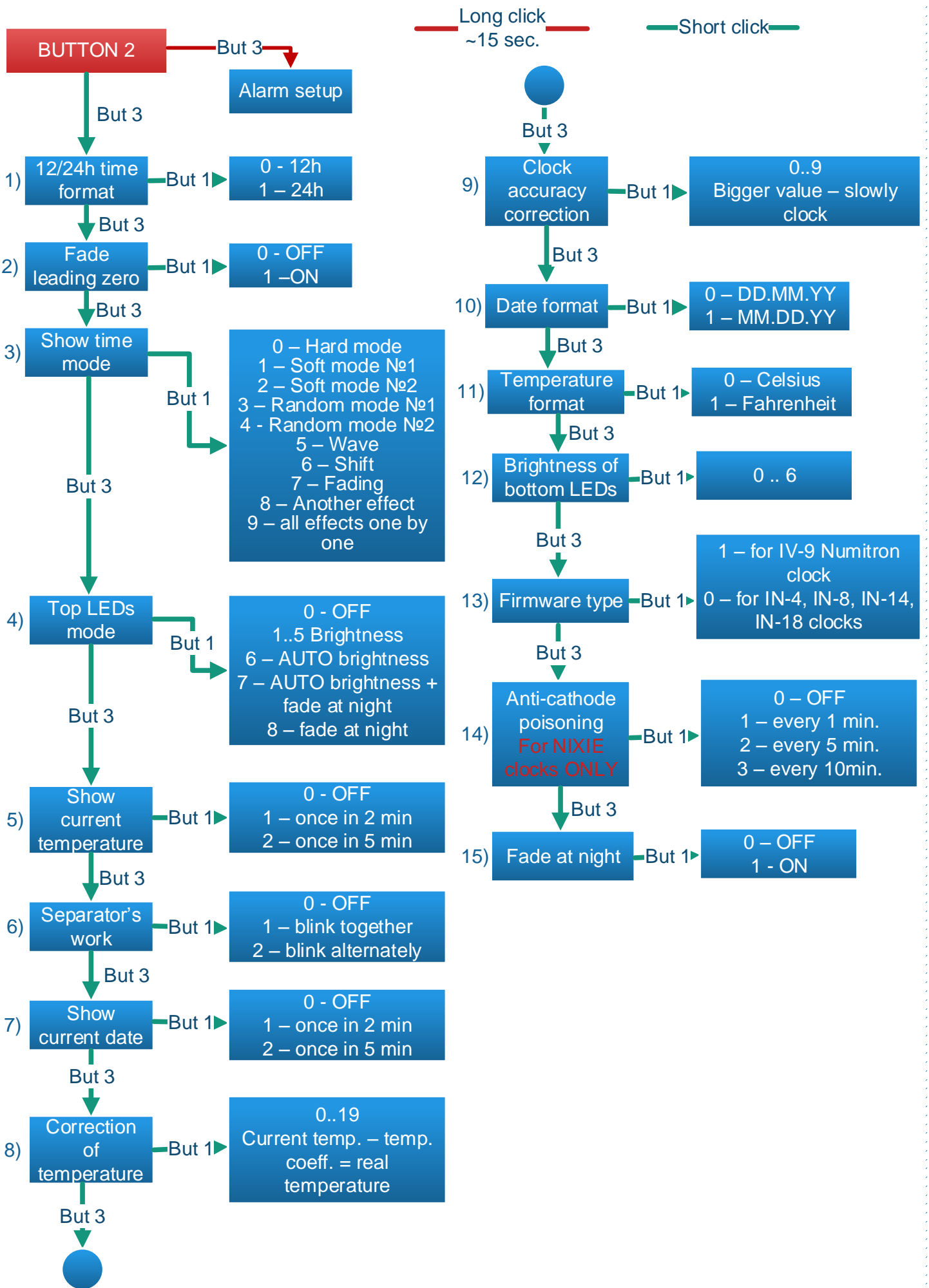
| Button    | Action                        |
|-----------|-------------------------------|
| <b>OK</b> | Enter/exit in parameters mode |
| ◀▶        | Next effect of switch time    |
| ▲▼        | Change value                  |
| <b>1</b>  | Time setup                    |
| <b>2</b>  | Alarm setup                   |
| <b>3</b>  | Date setup                    |

|   |                               |
|---|-------------------------------|
| 4 | Show temperature              |
| 5 | Show date                     |
| 6 | On/off alarm                  |
| 7 | Countdown timer setup         |
| 8 | Turn off LEDs and tubes       |
| 9 | Brightness of bottom LEDs     |
| * | Change brightness of top LEDs |
| # | Change color of top LEDs      |

- Use ◀ ▶ for change position in setup modes
- For change value you can use ▲ ▼ or use any number buttons







Long click  
~1 sec.

Short click

