

# USER MANUAL – ELECTRONIC LIGHTNING CONTROLLER WITH PUSH AND ROTARY BUTTON FOR LED LAMPS

## Characteristics of electronic lightning controller with push and rotary button for LED lamps

Electronic lightning controller with push and rotary button (dimmer switch) ...FRO-2 enables adjustment of LED dimmable light, halogen light supplied by electronic transformer and incandescent light.

Use of the controller increases comfort and daily savings in electricity which consumption is proportionate to the light intensity. Electronic lightning controller with push and rotary button... FRO-2 is an intelligent device, that can be programmed to be individually set according to minimal light level and operational mode.

### Important!

Prior to the first start-up of the regulator, it is necessary to carry out its configuration (see programming instructions). With the configuration, the regulator "learns" how to cooperate with the lighting connected to it.

Controlling involves the use of potentiometer with switch. The controller is equipped with overload and short-circuit protection. In case of overload occurrence the controller will switch off automatically.

### Note!

The device does not cooperate with halogen light powered by magnetic transformer, e.g. toroidal one.

**In case of light level adjustment of several light source, the same powers and bulb types shall be used.**

## Technical data

Symbol	...FRO-2
Power supply	230V~ 50Hz
Tolerance of voltage supply	-15 ÷ +10%
Light control	switch and regulation on potentiometer
Cooperation with load	LED dimmed, halogen powered by electronic transformer, incandescent
LED load capacity	<b>0 ÷ 100W (max. 10 x LED dimmed)</b>
Halogen and incandescent load capacity	10 ÷ 250W
Number of connection clamps	3
Cross section of connection cables	max 1,5 mm <sup>2</sup>
Fixing of the casing	standard flush-mounted wall box ř 60mm
Temperature operation range	from -20°C to +45°C
Contamination level	2
Dimension with external frame	90,1x81,1x55
Protection index	IP 20

## Warranty terms

The guarantee is provided for a term of twelve months from the date of purchase. The defective controller must be delivered to the producer or to the seller with a purchase document. The guarantee does not cover the fuse exchange, mechanical damage, damages raised by self-repair or improper use.

The warranty period shall be extended by the duration of the repair.

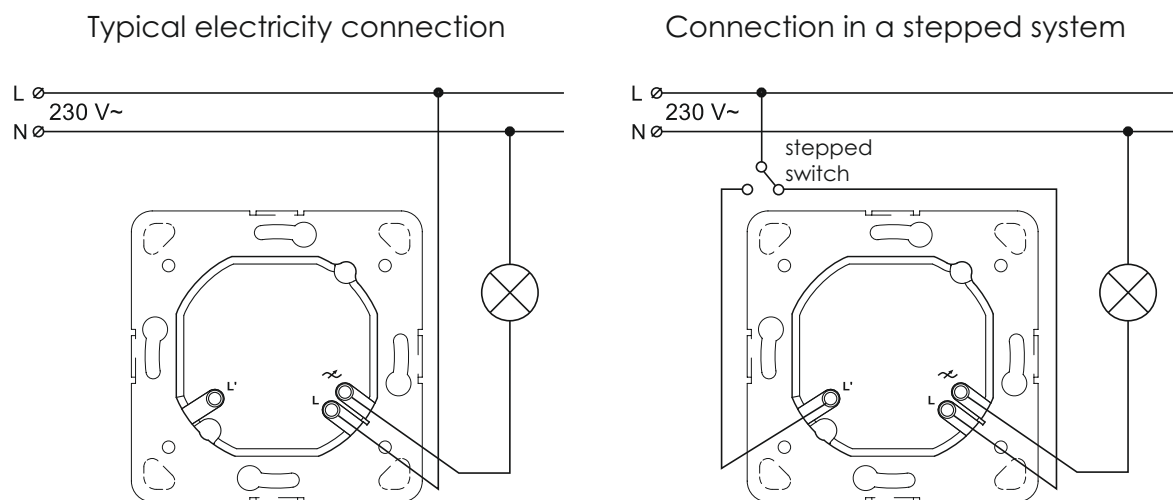
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## ASSEMBLY MANUAL

### Installation

1. Deactivate the main fuses of home installation.
2. Check if there is the phase wire brought into the installation box.
3. Prise the regulatory button with use of screwdriver and remove it.
4. Push clips on side walls of the external adapter with flat screwdriver and remove it.
5. Connect the phase wire to the clamp with "L".
6. Connect the other wire to the clamp with an arrow "∞". (\*In case of dual-circuit system connect the third and the fourth wire to the clamp with an arrow "∞".)
7. Assemble the dimmer module in the installation box with resilient clips or fastening screws that are supplied with the box.
8. Assembly the external frame.
9. Assembly the dimmer and the control button.
10. Activate the main fuses of home installation and carry out functional tests.

### Electric connection scheme of the lightning controller



### Note!

Assembly shall be held by a suitably qualified person with deactivated voltage and shall meet the national safety standards. To maintain compliance with Protection Class II, user access to the rear of the device must be prevented.

**Connecting two regulators in a two-way system may damage regulators.**

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## PROGRAMMER GUIDE

All programming operations shall be carried out smoothly one by one, with the maximal time interval of 3 seconds between subsequent operations.

### Minimal light level

In case of flashing light effect during dimming the minimal light level shall be increased.

### Configuration of minimum light level

1. Switch off the controller and turn the potentiometer to position MINIMUM (i.e. turn the knob all the way left).
2. Next, restart the regulator 3 times with approximately 1 second interval between each switching on and off (pattern: on - 1s - off - 1s - on - 1s - off - 1s - on).
3. After the above series of switches the light will start flashing. After it stops the controller will be in the CONFIGURATION mode.
4. Within maximum next 3 seconds after the light goes off turn the knob right until the light switches on and set the minimum satisfactory light level.
5. Leave the controller in this position for three seconds. In that time the device will "accept" and "remember" the minimum light level setting.
6. When the light goes strong and then weak the controller goes back to its normal operation.

### Operation mode

By default, the regulator operates in Mode 2. If the regulator does not operate properly (eg the lighting flashes or the desired minimum lighting level cannot be set), change the operation mode of the regulator to Mode 1.

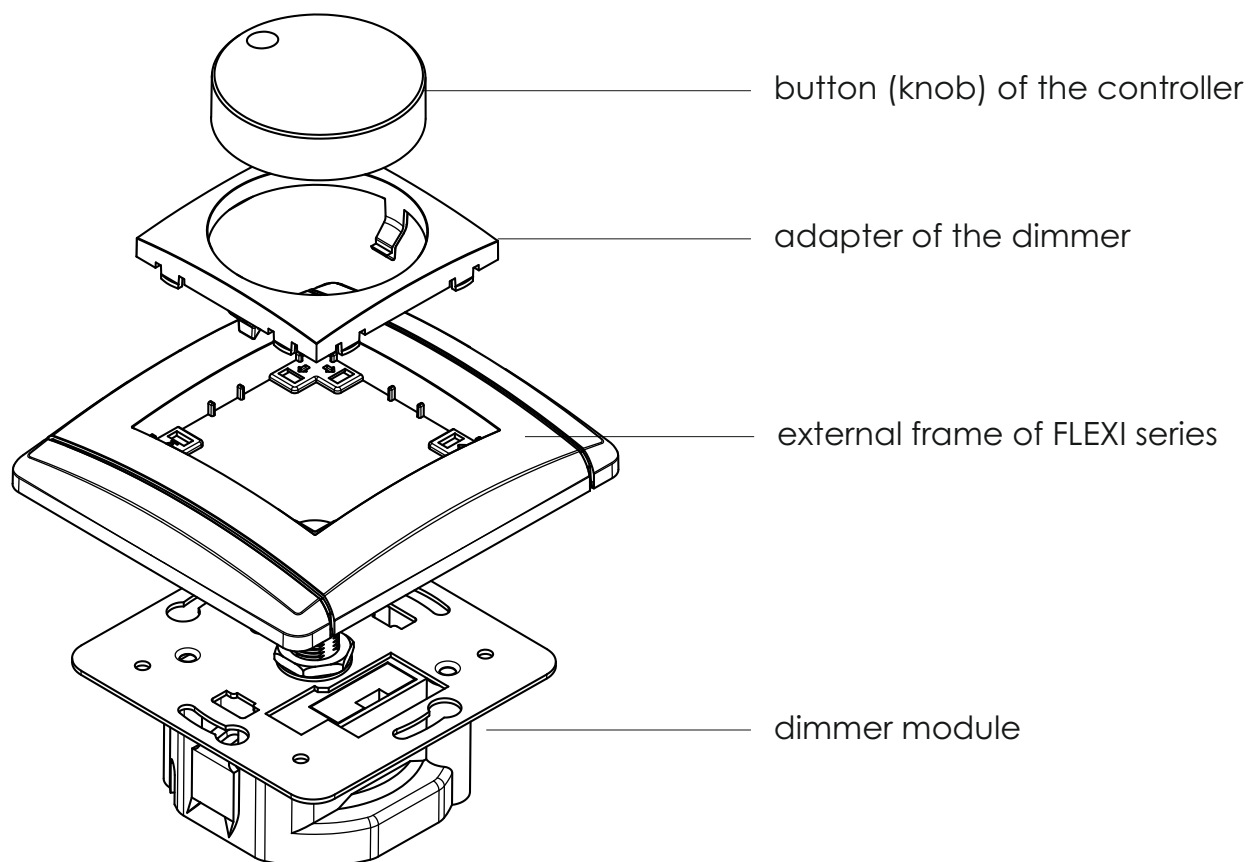
If, after changing the operating mode from Mode 2 to Mode 1, the lighting still does not work properly, change the operating mode again to Mode 2 and check whether the regulator is working properly.

### Change of operation mode

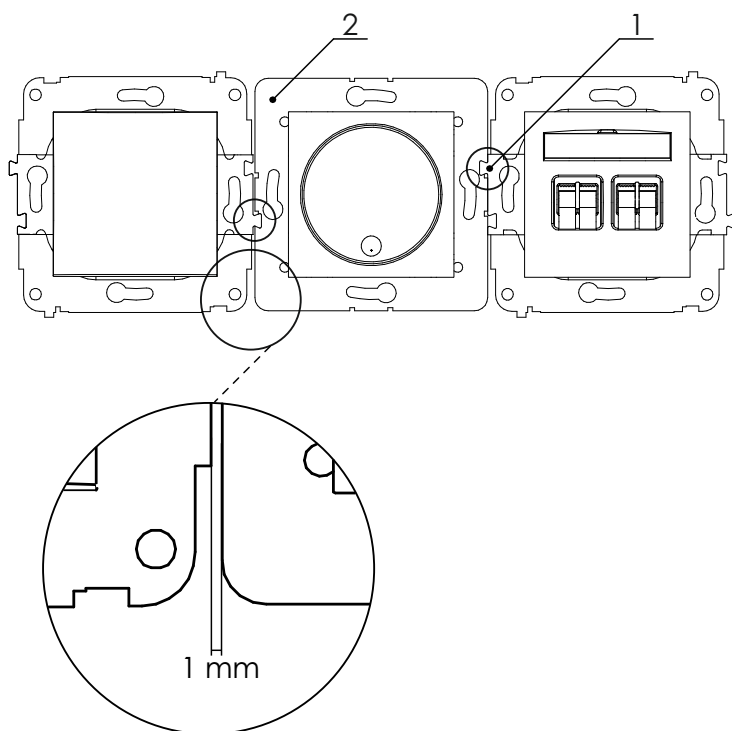
1. Switch off the controller and turn the potentiometer to position MAXIMUM (i.e. turn the knob all the way right).
2. Switch off and switch on the controller three times with 1 second interval between the switching on and switching off (follow the scheme: turn off - 1s - turn on - 1s - turn off - 1s - turn on - 1s - turn off - 1s - turn on - 1s).
3. The light shall flash several times and then stop, this will mean that the controller is in the CONFIGURATION mode.
4. To select mode no. 1 turn the knob within 3 seconds to the position MINIMUM, and then turn back to the position MAXIMUM.
5. To select mode no. 2 turn the knob within 3 seconds to the position MINIMUM.
6. When the light turns on once it means the mode no.1 has been set, when the light turns on twice it means the mode no 2. has been set.
7. After operation mode is set the device shall return to its normal operation.

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## Components of the electronic lightning controller with push and rotary button for LED lamps



## Installation instructions for electronic light controller mechanism in multiple frames



1. First, install the electronic light control mechanism in the mounting box. The other adjacent mechanisms are installed so that the "dovetails" (1) (if any) overlap the central plate of the controller (2).

2. The distance between the central frame of the dimmer and the adjacent products should be about 1 mm.