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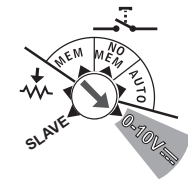
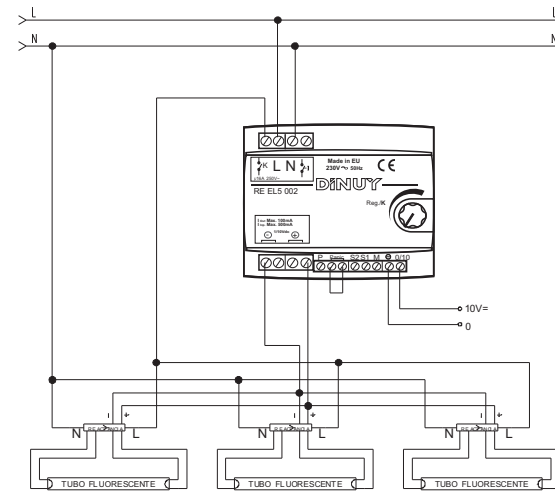
INSTRUCTION MANUAL

**Modular Dimmer
for Electronic Ballasts
RE EL5 002**

It is recommended to leave >2meters distance between the Dimmer and the Ballasts.
IMPORTANT: connect properly the earth wire in all the ballasts of the installation.

Example 5 Controlled by 0-10Vdc Signal

- Make the installation according to the drawing.
- Selector switch must be in 0-10V= position.
- The 0V level corresponds to the turn-off state. As the tension increases to 10V, the light intensity increases too.

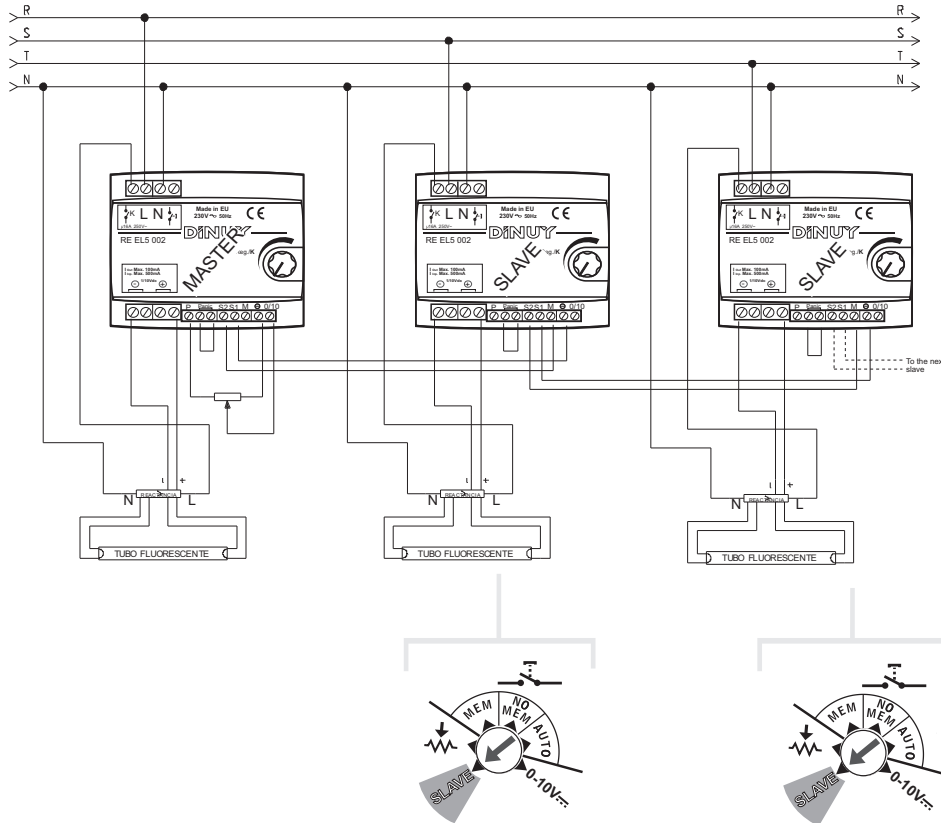


ATTENTION: the 0-10Vdc signal must be electrically isolated from the 230V~ power supply.

ATTENTION

The devices must be installed by qualified personnel and without power supply.
The power supply must be protected according to the current regulations.

Example 4 Three-phase installation with dimmer controlled by 10K Potentiometer and increased with Slaves



Modular Dimmer RE EL5 002

This device permits to regulate fluorescent or compact fluorescent lamps that have a dimmable electronic ballast with 1/10Vdc low voltage control line.

Five modules wide (87.5mm). For DIN 46277 rail installation.

It has a "K" relay to disconnect physically the ballasts (16A max.).

It is universal in terms of control. It admits:

- Control by pushbutton.
- Control by 10K potentiometer (built-in or external) or rheostat.
- Control by 0 - 10Vdc signal.

Different working modes:

- "Master" controlled by Potentiometer.
- "Master" controlled by 0-10Vdc Signal.
- "Master" controlled by Pushbutton with Memory.
- "Master" controlled by Pushbutton without Memory.
- "Master" controlled by Pushbutton in Auto mode.
- "Slave".

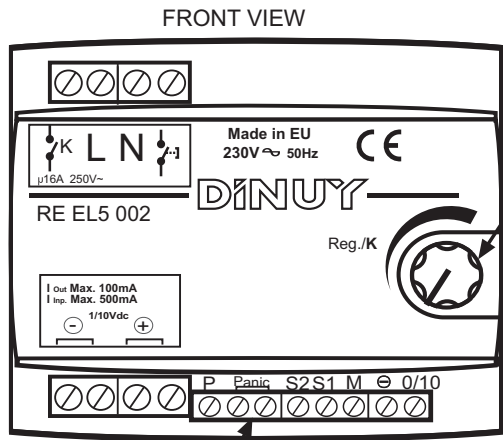
It incorporates a regulation control (only for potentiometer mode).

It is provided with an Anti-Panic input for security systems in case of fire.

Technical Specifications

Power Supply	230V~ 50Hz
Consumption	2,7W Cosφ=0,73
Type of Load	Dimmable Electronic Ballast for Fluorescents
Maximum number of Ballasts	200
Relay Operating Voltage	250Vac
Relay Cutting-Off Power	16A
Output Voltage assured range	1-10Vdc
Maximum Absorption Current	500mA
Maximum Injection Current	100mA
Control types	External Voltage (2 wires)
	Potentiometer (3 wires)
	Rheostat (2 wires)
	Pushbutton (2 wires)
External Potentiometer value	10K
External Rheostat value	10K
Dimensions	5 modules
Weight	420g
Working Temperature	0° to +40°C
Storage Temperature	-30° to +70°C
Terminals	Up to 6mm ² section conductor
According to the Standard	EN 60669-2-1
Protection ratio	IP 20

Description of the Dimmer



Dimming Potentiometer/K

CONTROL BY POTENTIOMETER

SET AT MINIMUM:
It permits the use of an external potentiometer.

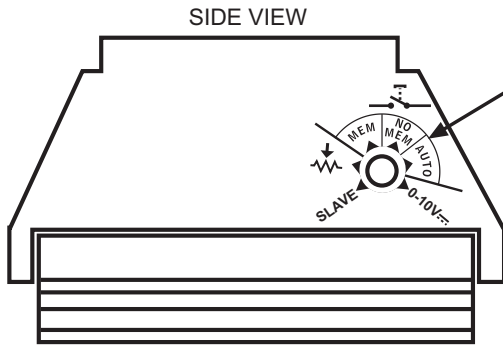
AT ANY HIGHER POSITION THAN THE MINIMUM:
It permits that the dimmer responds to its changes and it ignores the sign of any external potentiometer.

ANY OTHER CONTROL
It fixes the minimum level for dimming.

Anti-Panic Function

Panic In case of emergency, an opening of the contactor will set the load at maximum, according to the current regulations.
If this function is not required, the two terminals must be connected together.

If it is required, an external relay must be placed between both terminals. If an emergency situation appears, this relay must be opened.



Mode Selector Switch

SLAVE Slave mode

Control by Potentiometer

MEM Control by Pushbutton with Memory

NO MEM Control by Pushbutton without Memory

AUTO Control by Pushbutton with Status Memory

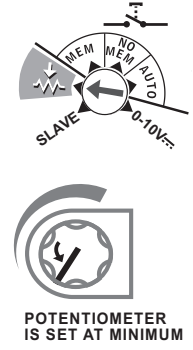
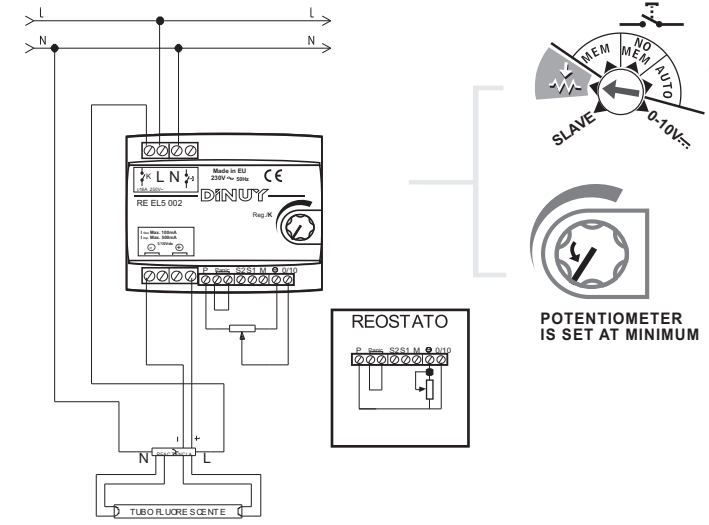
0-10V Control by 0-10Vcc signal

It is recommended to leave >2meters distance between the Dimmer and the Ballasts.
IMPORTANT: connect properly the earth wire in all the ballasts of the installation.

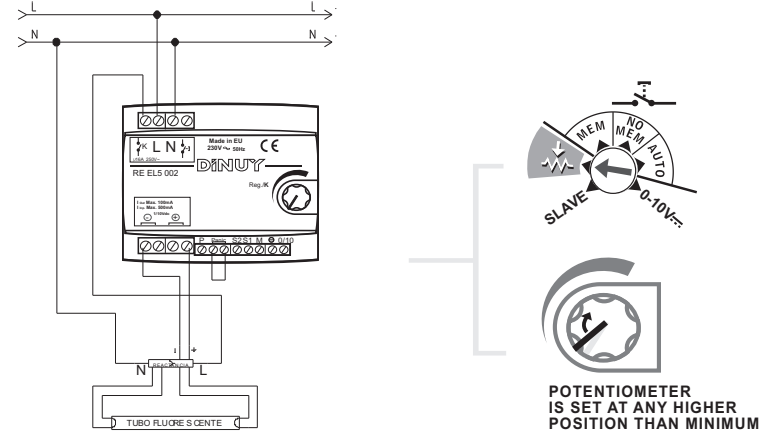
Example 3 Controlled by Potentiometer

- Make the installation according to the drawing, depending on it is used an external potentiometer or the built-in one.
- Selector switch must be in position.
- The regulation level depends on the position of the potentiometer.
- Turning left/right the potentiometer the light intensity will increase/decrease.

A) Control by External Potentiometer



B) Control by the Built-in Potentiometer



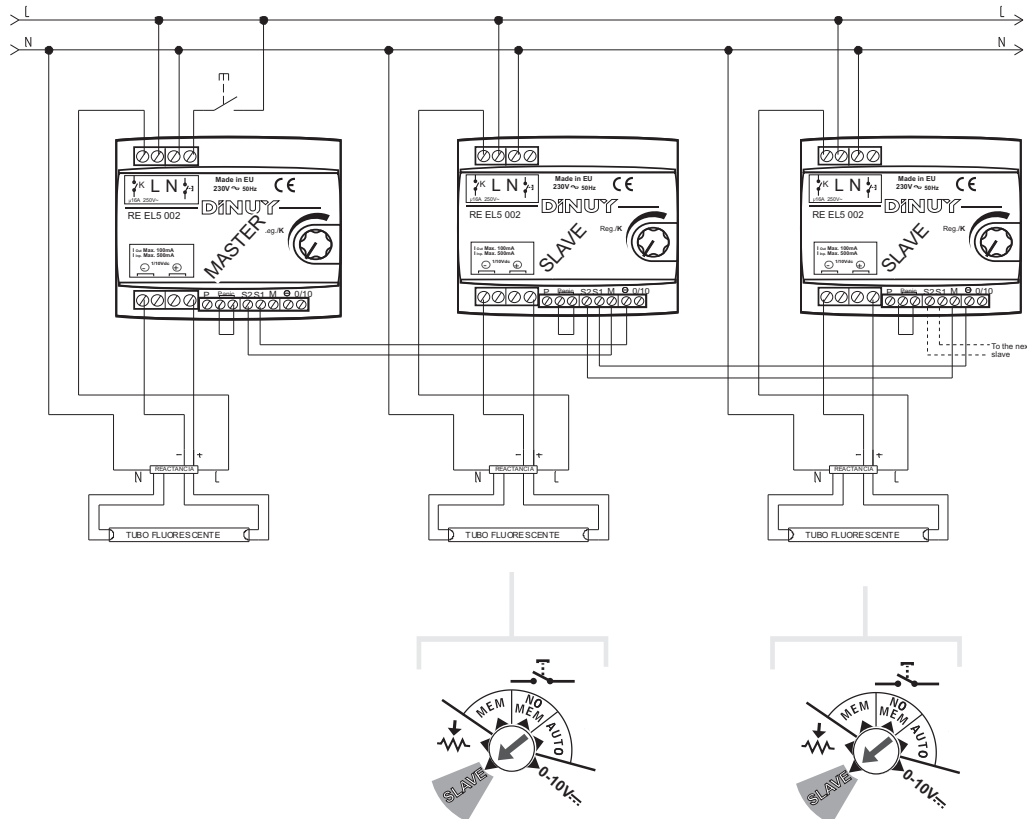
ATTENTION

The devices must be installed by qualified personnel and without power supply.

The power supply must be protected according to the current regulations.

Example 2 Controlled by Pushbutton and increased with Slaves

- Make the installation according to the drawing. The Master dimmer must be set according to example 1. To work as Slave, the dimmers must have the selector switch in **SLAVE** mode.
- It is possible to add an unlimited number of slaves (see drawing). The only limitation are the response time delays as slaves are added and the heat dissipation capacity in the installation place.
- It is recommended leaving a minimum separation of 1 module between each dimmer.



General Operation

This device has a lateral selector switch that will permit to the user to programme the desired control type to regulate the loads (pushbutton, potentiometer or rheostat, and external 0-10Vdc signal), as well as the operation mode (with or without memory, automatic and master/slave mode).

All these controls are external elements that have to be connected to the dimmer according to the different electrical diagrams included in this instruction manual.

The potentiometer, rheostat and 0-10Vdc signal use the same input, which is why it only can be regulated with an only control at each moment. The pushbutton uses other different input, so it can be installed with one of other three controls. Only the selected control with the selection switch will be active.

After selecting the control and the working mode, and the wiring had been completed, the device could be supplied. It will be possible to change the position of the mode selector switch at any moment without disconnecting the power supply.

This device basically has two elements to control the load: "K" relay and 1/10Vdc. The K relay is a contactor which opens or closes the output phase to the ballasts. Therefore, with this relay the power supply of the electronic ballasts will be controlled and with the 1/10Vdc output the light level will be regulated. So that, a 10Vdc output will set the lamps to its maximum luminosity and a 1Vdc output to its minimum one. It is necessary to use the K relay when is intended to turn off totally the lamps, avoiding that the ballasts keep supplied when is unnecessary. It could be possible to make an installation without using the K relay whenever it is indifferent to the customer that the lamps keep to its minimum luminosity and the ballasts keep supplied continuously.

The potentiometer of the front side has two functions. When the control by potentiometer mode is selected this control will regulate the light level. In the other operation modes this control will set the minimum regulation level. So that if it is set at the middle, it only will be possible to regulate the loads from 100% to 50%. Besides that, this potentiometer is luminous, keeping turned-on always that the K relay is closed (Ballasts supplied).

Hereafter the different working modes are explained:

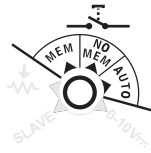
Pushbutton

To turn on/off the lamps it is necessary to make short pulsations. When turning off, the device opens the K relay and the 1/10Vdc is set at 1V. When turning on, the relay is closed and the luminosity level is set at maximum (10Vdc) or at the memory level.

The dimming will be made cyclically with a large pulsation, pressing the pushbutton until the desired level is reached.

After stop pressing the pushbutton if it is pressed again the dimming direction will change.

The pushbutton has 3 operation modes:



- MEM** or with memory. The turning-on will be made at the same level that was before the turning-off.
- NO MEM** or without memory. The lights will be turned-on at maximum level.
- AUTO** or with regulation and state memory. Similar to MEM mode and also it will keep the working state when the power supply returns after a cut-off.

Potentiometer or Rheostat

The potentiometer will regulate the luminosity in function of its turning position, increasing the level until the maximum one turning right the control. If it is set to the minimum, there will be 1Vdc at the output and the K relay will open its contactor. It is possible to use the built-in potentiometer or a 10K external one. If an external one is used it is necessary to set the built-in one at minimum, otherwise the internal will have priority over the external one.

External 0/10Vdc Signal

With this signal we will obtain at the ballasts a proportional level to the input voltage: 1Vdc - minimum and 10Vdc - maximum.

If it is necessary to regulate more load than the accepted by the device, it is possible to connect more dimmers, configured in slave mode, regulated all of them with an only control installed at the master.

It is possible to connect different DINUY dimmer references with this master/slave configuration, in order to regulate different type of loads to the same level with only one control.

CAUTIONS AND RESTRICTIONS

Do not connect to the K relay output loads that exceed 16A. If the nominal current is higher than 16A it will be necessary to insert a contactor at the K relay output.

The external control voltage 1/10Vdc should not exceed 10V. Besides that, this input never should be polarized on the contrary.

Do not consume more than 100mA at the 1/10Vdc output, neither inject more than 500mA. The short circuit of this two terminals (Θ and 0/10V) can make irreparable damages to the device).

It is possible to install the pushbutton with the other three controls, but only the adjusted one with the selector will be active.

Wiring Diagrams

Example 1 Controlled by Pushbutton

- Make the installation according to the drawing.
- Place the selector switch in the desired working mode:
 - **MEM:** Lights will be turned on at the same level than when turned off for the last time.
 - **NO MEM:** Lights will be turned on at maximum level.
 - **AUTO:** Lights will be turned on at the same level than when turned off and also they will maintain the working state (turned on/off and dimming level) when the power supply returns after an electrical cut-off.
- A short pulsation in the pushbutton will turn on/off the load.
- A long pulsation will cyclically dimmer the loads while the pushbutton is pressed.

