

DINUY



INSTRUCTION MANUAL

Dimmer for LED lamps RE EL5 LE1

Dimmer for LED lamps - RE EL5 LE1

Description

It is based on a leading-edge phase control TRIAC Dimmer valid for 230V~ dimmable LED lamps which support this technology.

Features

- Modular design, DIN rail mounting. Five modules wide.
- Control by: pushbutton (with or without memory), potentiometer (built-in or external) or 0/10V_{dc} signal.
- Dispone de un potenciómetro que, en caso de controlar por pulsador, señal 0/10V_{cc} o señal de Maestro, permite seleccionar el nivel mínimo de regulación. De esta forma se puede evitar que al nivel de regulación mínimo las lámparas den la impresión de estar apagadas o se produzcan parpadeos.
- Incorporates a selector switch which allows to set up the dimmer to the used LED lamp.
- Master/Slave configuration, which enables:
 - To increase the maximum load capacity per line. Unlimited number of slaves
 - To control the dimmer using a remote control and an interface: CO REG R01 + CO REG R03.
- It incorporates a heating protection which will switch the lamps off in the event of overheating.
- Anti-panic function (optional) for safety systems: if the "Panic" jumper is opened the lamps will light at maximum, ignoring the dimming level.

Technical Specifications

Power Supply	230V~ 50Hz
Consumption	2,5W
Load Capacity	1.200W (*)
Control	Pushbutton, potentiometer (built-in/external) and 0-10V _{dc} signal
External potentiometer value	10Kohms
Pushbuttons	Unlimited number of non-illuminated. Does not admit lighted ones.
Input impedance at 0-10V control signal	100Kohmios
Dimensions	5 modules, 87,5mm wide x 65mm depth
Weight	400gr
Working temperature	-10°C ~ +55°C
Storage temperature	-30°C ~ +70°C
Terminals (power supply)	"Lift" type for wires up to 6mm ² section
According to the Standard	EN 60669-2-1
Protection degree	IP 20

The accumulation of dimmers inside the same installation box could need forced ventilation in order to avoid excessive heating of the dimmers.

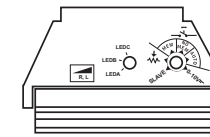
(*) MAXIMUM LOAD FOR DIMMERS NOT EXPOSED TO OTHER HEAT SOURCES OR INSTALLED INSIDE WELL DIMENSIONED AND VENTILATED INSTALLATION CABINETS

ATTENTION

- Power supply must be protected according to the current standards.
- The devices must be installed by qualified personnel without 230V~ power supply.

Operation

The dimming can be performed with different controls, depending on the configuration selected:



- SLAVE** Slave mode
- MEM** Control by Potentiometer
- NO MEM** Control by Pushbutton without Memory
- AUTO** Control by Pushbutton with Status Memory
- 0-10V=** Control by 0-10V_{cc} Signal

Pushbutton control:

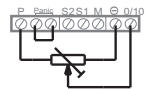
- Short pulse: switch ON/OFF.
- Long pulse: dim.



In this mode (MEM, NO MEM or AUTO) the frontal potentiometer sets the minimum dimming level. It avoids flickerings or undesired switching-offs.

External Potentiometer control (galvanically isolated):

- It is possible to control the load with a potentiometer of 10Kohms.
- At the minimum the load will be turned-off.
- As the potentiometer is turned clockwise the light level is increased.
- It is necessary to set the built-in potentiometer at minimum.



Built-in Potentiometer:

- It is possible to control the load with the potentiometer of the dimmer.
- If this potentiometer is set at any higher value than minimum, the external potentiometer will not dim.



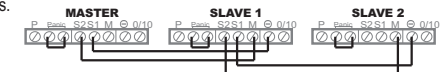
0/10V_{dc} signal control (galvanically isolated):

- Any external 0-10V_{dc} power supply can be used, isolated or not (PLCs,...).
- 0V: the load is switched-off.
- 10V: the load is switched-on at maximum.
- In this mode the frontal potentiometer sets the minimum dimming level. It avoids flickerings or undesired switching-offs.



Master/Slave configuration (galvanically isolated):

- This configuration can be used when the load exceeds the maximum load that supports the dimmer.
- In this way, it is possible to distribute the load across multiple dimmers and extend the load.
- For this it is necessary to spread the load on different lines, each dimmer controlling its maximum permitted load.
- It is also indicated the use of slaves in those installations where is necessary to set different types of lamps.
- In this mode the frontal potentiometer sets the minimum dimming level. It avoids flickerings or undesired switching-offs.



Anti-panic function:

- If this option is not used, keep the bridge between terminals (-) and (AP), thus the operation of the dimmer is normal.
- If jumper is removed, the dimmer applies the maximum power to the load and it does not respond to the orders.



Over-temperature protection:

- It incorporates a heating protection which will switch off the lamps in case of overheating.
- If the dimmer is switched-off to auto-protect against the over-temperature, please try to:
 - Reduce the output load.
 - Install the dimmer inside an electric cabinet with forced ventilation or without other heat sources, or place them in the lower part of the cabinet, where the accumulation of heat may be lower.

LED lamp type selector switch:

- It has a selector switch with 3 modes of operation: LEDA, LEDB and LEDC.
- Change the selected mode if you notice that the LED lamps blink or change light level suddenly at some point of the dimming. Select the mode that best fits the characteristics of your LED lamp model.



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Installation

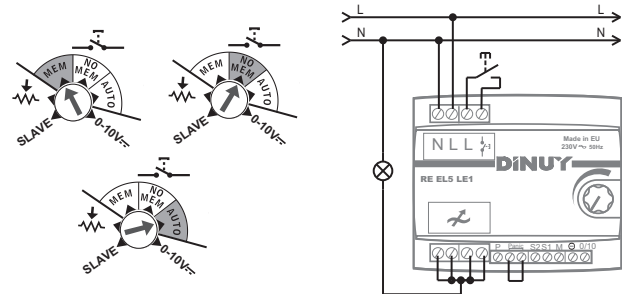
Follow these steps when installing:

- 1° - Configure an operating mode with the knob.
- 2° - Disconnect the power supply of the installation.
- 3° - Insert the dimmer on the DIN-rail of the electric cabinet. Avoid placing it together with other sources of heat, like other dimmers.
 Consider the most appropriate or ventilated place.
 We recommend at least one module gap between dimmers and forced ventilation in some places.
- 4° - Select a wiring diagram and do the installation depending on the desired operation mode.
- 5° - Connect the power supply.

Example 1 Controlled by pushbutton

- 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.

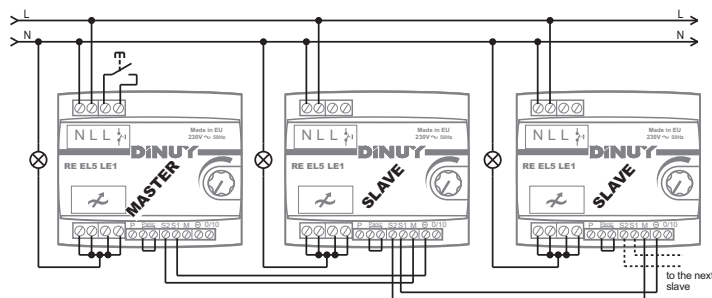


Example 2 Controlled by pushbutton and increased with Slaves

- The Master dimmer must be set according to example 1. To configure as Slave the dimmers must have the selector switch in **SLAVE** mode.

- It is possible to add an unlimited number of slaves. The only limitations are the response time delay as slaves are added and the heat dissipation capacity of the installation box.

- It is recommended to leave a minimum separation between each dimmer (1 module separation).

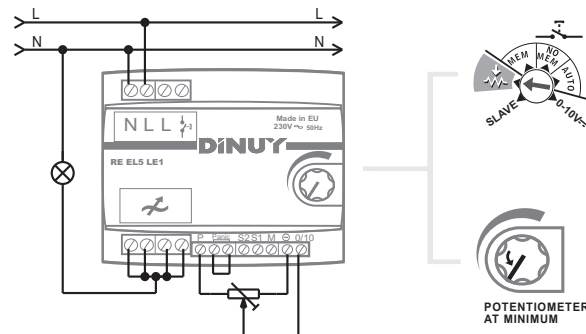


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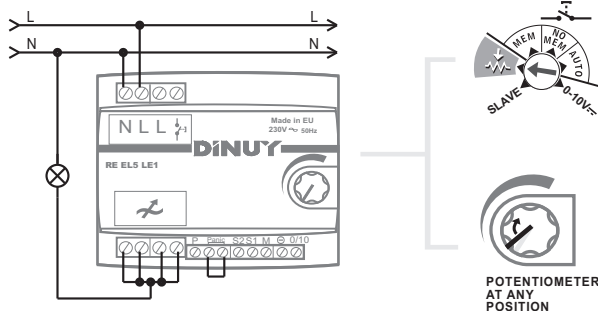
Example 3 Controlled by potentiometer

- Selector switch must be at position.
- The lighting level depends on the position of the potentiometer.
- Turning the potentiometer clockwise the light intensity will increase.

A) Control with external potentiometer.

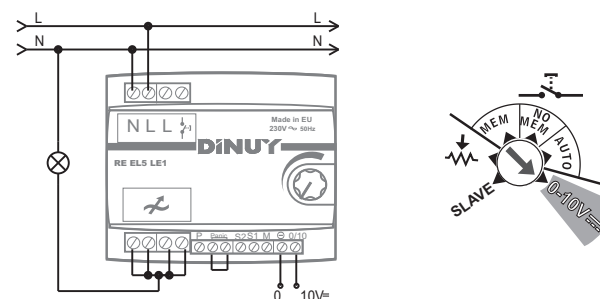


B) Control with built-in potentiometer.



Example 4 Controlled by a 0-10Vdc signal

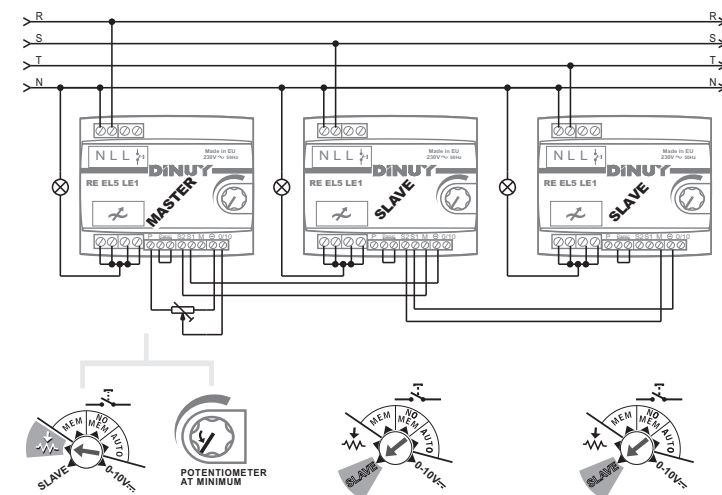
- Selector switch must be at position.
- The 0V level corresponds to the turned-off state. As the voltage increases to 10V the light intensity increases too.



ATTENTION - Power supply must be protected according to the current standards.
 - The devices must be installed by qualified personnel without 230V~ power supply.

Example 5 Three-phase installation controlled by potentiometer and increased with two Slaves

- Do the installation according to the drawing. The Master's selector switch must be set according to example 3A. The slave's selector must be set at **SLAVE** position.
- It is recommended to distribute the loads between the three phases.
- In case of three-phase line without electric neuter, please contact with our technical department.



Precautions and Limitations

- ▲ The mains supply must be protected according to existing rules.
- ▲ The devices must be installed without power supply and by qualified personnel.
- ▲ Disconnect the mains to handle the load, replacing burned-out lightbulbs, removing or adding new ones.
- ▲ Illuminated pushbuttons are not allowed.
- ▲ Do not exceed the maximum load of the device. Use the Master/Slave configuration to expand the load.
- ▲ Do not mix different types of load. Use the Master/Slave configuration to control different types of load at the same time.
- ▲ Do not install dimmers next to each other. Leave free at least one module gap between them or other sources of heat and or place them in the lower part of the cabinet, where the heat may be lower.
- ▲ Design the installation cabinet properly to avoid heat problems. In some cases may require forced ventilation.

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