

# Mains Dimming

There are different ways for dimming the LED strips and it is always important to ensure that the type of LED driver matches the control system in use. Mains dimming is one of the ways for dimming the LED strips, using rotary switches or wall-mounted dimmers (no extra control cable is required).

We recommend that the dimmers are tested with the drivers, to ensure compatibility in practise, even if they are theoretically compatible.

## Hi-Line mains dimmable drivers:

Hi-Line offers a variety of mains dimmable drivers of different output power. The lowest power available in mains dimmable drivers is 12W, where the highest is 200W. In order to achieve the desired outcome, it is suggested to load the driver at, at least, 50% of its power capacity (i.e. a 100W driver should be loaded with at least 50W LED load).

Therefore, a careful selection of the driver, considering the load of the LED strips, is essential in mains dimming.

## Choosing the best suitable dimmer:

- For the Hi-Line low power mains dimming drivers (i.e. 12W, 20W, 30W and 60W) a trailing edge dimmer is required, to ensure the smooth dimming.<sup>1</sup>
- For the Hi-Line high power mains dimming drivers (i.e. 100W, 150W and 200W) a leading edge (triac) dimmer is required.<sup>2</sup>

Additionally, it is important to check the minimum and maximum limits of the rated operating power of the dimmer, to ensure that they match the load of the LED strip installation. The minimum wattage of the dimmer should be as low as possible, where the maximum wattage should be more or equal to the LED strip load, connected to the dimmer.

It is also important to check any other limitations of the dimmer (i.e. different minimum and maximum limits when used with LED).

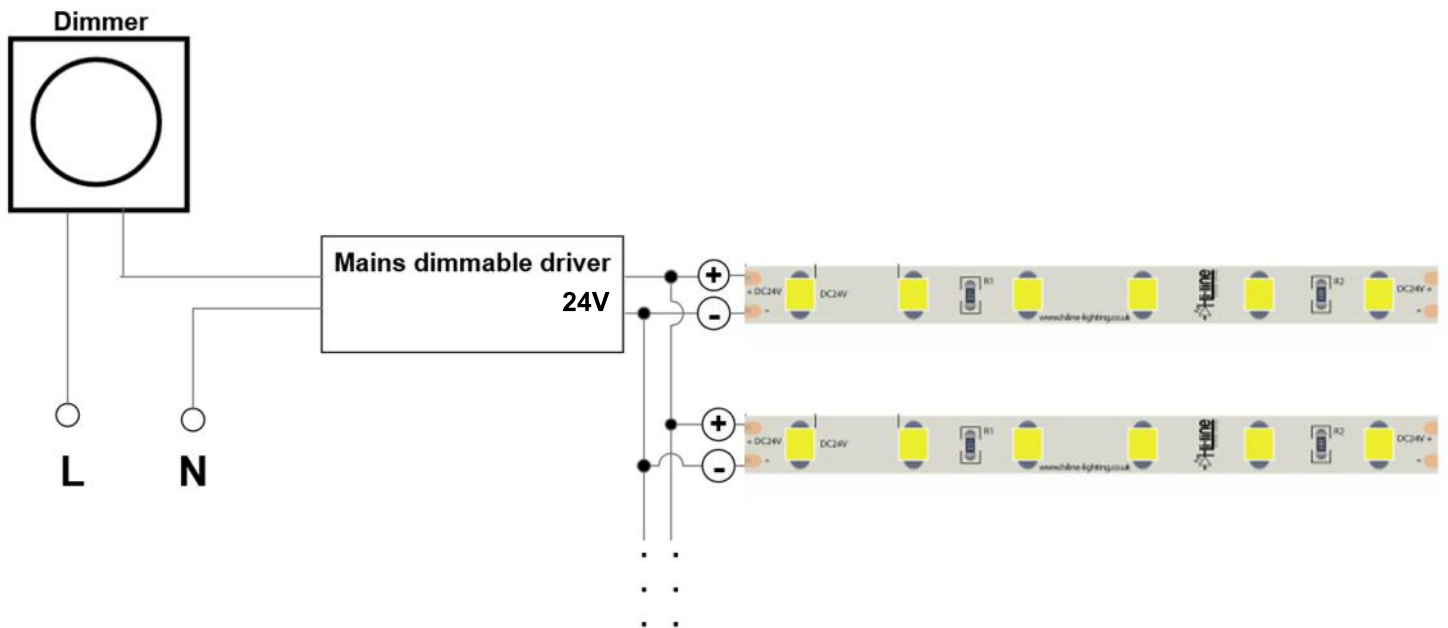
**1.** We have tested the Varilight V-Pro (VL JQP401W) dimmer and it works smoothly with our low power mains dimmable drivers (12W, 20W, 30W, 60W). This dimmer has 3 modes and it is set by default to trailing edge mode, as required for the low power mains dimmable drivers.

**2.** We have tested the Varilight V-DIM (VL11) dimmer and it works smoothly with our high power mains dimmable drivers (100W, 150W, 200W).

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The dimmer is wired to the mains dimmable driver as shown in figure 1. Please refer to the “Installation of LED strip” file for further advice on the length restrictions of the LED strip connected on a single driver.

In the case that a longer run of LED strip is required (above the maximum limit of the driver used), to be controlled by the same dimmer, multiple mains dimmable drivers can be connected in parallel to the first one. The number of drivers per dimmer depends on the maximum load of the dimmer (the total load of the LED strip cannot exceed the highest operating wattage of the dimmer).



**Figure 1:** Dimmer - LED strips schematic

It is suggested that any dimmer is tested on site, to ensure compatibility, before installing.