

Proximity Dimmer and Switch 3-in-1 for LED Strips

User Manual

(312315 / 312316)

Miniature dimmer/switch with an optical proximity sensor for installation in ALU profiles. In addition to the basic functionality of a proximity-controlled dimmer, it also allows contactless light switching when the door opens or as a twilight switch. The Soft Start/Stop function is easy on the eyes, it remembers the last lighting intensity settings even when power supply is cut. It can be operated in 11 modes, which are described in greater detail below.

Supply voltage	6-28V DC
Max. switching current	7.5A@12V 5A@24V
Range of regulation	0-100%
Dimensions	10x28mm
Power consumption	0,06W@12V 0,12W@24V

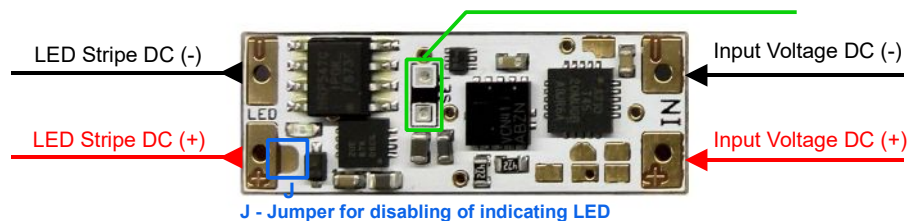


Fig.1 - Connection of the dimmer

Supply voltage must not exceed the maximum voltage of the LED strip used!

Characteristics of the proximity sensor: The dimmer can detect an object (hand, door) approaching the sensor by detecting the reflection of infrared flashes it emits. The maximum sensor range is 10cm. The angle of view is approx. 100% when a shallow profile and a transparent diffusor are used, and it reacts to an approach from the side, which is convenient for light switching using the housing door. When a milky diffusor is used, the switch's range is shortened to approx. 2-3cm and it does not react from the side. The range is also influenced by the reflectivity of the detected object. When door-switching is used for the lighting and the door is made from a black material, it will probably be necessary to place a brighter area within the sensor range. The approach detection is not set to the absolute distance but to a relative status change - getting near or getting far. A constant immobile barrier extending partly in the detection zone may decrease the maximum reach, however, it cannot cause triggering. A fly climbing across the sensor may cause unwanted triggering because the sensor cannot distinguish whether the IR flashes are reflected by a user's hand or by an insect.

Mode 1 - Standard Dimmer

A short wave of hand in front of the sensor will switch the LEDs on or off. The LEDs illuminate within 1 sec from 0 % to the last set intensity, and when turned off, they gradually darken, within 1 sec, from the set intensity to zero. If you hold the hand in front of the sensor for a period of 3 sec or longer, the intensity of the lighting will gradually start to change; when the hand moves away, the LEDs will set and leave the intensity at the current level. When activated again, the dimming direction is reversed. At min/max levels the dimming stops and it is necessary to shortly move the hand away to reverse the direction. If a permanent obstacle gets in the range of the sensor (e.g. you embed the diffusor in the profile on the dimmer when the power is on) and it does not disappear within 10s from reaching the extreme dimmer level or after switching on, the LEDs will switch off and the dimmer will be reset. After connecting power, the LEDs always remain on.

Mode 2 - Standard Dimmer + memory, The same function as in Mode 1, but the dimmer will remember the status before the power failure. If it is lighting at the moment of disconnecting the power supply, it will switch automatically on when the power supply is reconnected.

The last set lighting intensity in modes 1 or 2 remains stored in memory for all other modes with smooth on/off as well.

Mode 3 - Simple Switch

Dimming and smooth switching is off; with every wave of hand in front of the sensor, the LEDs will immediately switch on or off. In this mode.

Mode 4 - Lighting Door Switch - Smooth on/off

When approaching, the light will switch off; when the door is going to the distance, the lights will switch on. If you switch the power supply on when the door is open, the LEDs will not turn on immediately; to activate LEDs, you first have to close the door and then open it. When the power supply is on and the door is closed, the LEDs will switch on upon first opening of the door. The start and finish are smooth and the lighting intensity can be set in mode 1. It is set to the maximum by default and if you wish to decrease it, firstly set the required LED brightness in mode 1 and only then switch to mode 4.

Mode 5 - Lighting Door Switch

The same function as in Mode 4, but without smooth start.. The LEDs will switch immediately without a smooth start until the maximum intensity, with no regard to the dimmer setting.

Mode 6 - Lighting Door Switch - Smooth on/off - Inverse

The same functions and settings as in Mode 4, however, it works in inverse, hence upon approach it turns on and when moving away it turns off.

Mode 7 - Lighting Door Switch - Inverse

The same functions and settings as in Mode 5, however, it works in inverse, hence upon approach it turns on and when moving away it turns off.

Mode 8 - Twilight switch 10 lux - Smooth on/off - Indicating LED must be disabled

The proximity sensor is inactive; the dimmer only works with the built-in sensor of ambient light. The decrease of ambient light intensity under 10 lux will result in smooth switching to the last set intensity, which can be set in mode 1. The twilight switch should not be located within the range of lighting it controls. However, this switch allows this to a certain extent. It can be installed in the same profile as the LED strip if the switch right after switching the lighting on reads a new lighting threshold value and then it is going to switch the lights off after it is exceeded at dawn. However, when necessary to separate the sensor in the profile from LEDs, so that the sensor receives only reflected light from the outside, it is usable for weaker decorative or night orientation lighting. To switch effective performance lighting, it is necessary to place the sensor out of its range, or at least to a location where the incidence of the switched lighting is as small as possible.

Mode 9 - Twilight switch 10 lux - Indicating LED must be disabled

The same function and settings as in Mode 8, but the dimmer function is disabled. The LEDs will switch immediately to the maximum intensity, with no regard to the dimmer setting.

Mode 10 - Twilight switch with adjustable lighting level for switching - Smooth on/off - Indicating LED must be disabled

After switching to mode 6, disconnect the power supply. Wait until it is as dim as you wish to switch the lights, or create the required dim artificially and switch the power supply on. Right after first switching on, the sensor will immediately store the current light level as the threshold in its memory. To change the threshold value, it is necessary to switch in Mode 6 again and repeat the procedure. After switching in mode 5, the threshold will be reset to 10 lux.

Mode 11 - Twilight switch with adjustable lighting level for switching - Indicating LED must be disabled

The same function and settings as in Mode 10, but the dimmer function is disabled. The LEDs will switch immediately to the maximum intensity, with no regard to the dimmer setting.

Setting the Mode

The factory setting for dimmers is Mode 1. If you need to change the mode, proceed as follows:

1. Disconnect power supply.
2. Using metal tweezers, short-circuit "SET"-marked terminals - see Figure 2.
3. After about 5s from connecting to the power supply, the strip starts blinking slowly, the number of flashes corresponds to the mode being set.

If you want to set Mode 3, let the strip blink 3 times and release the short-circuited terminals.

LED INDICATOR

An LED is fitted to the PCB (the yellow or blue are available to choose from), which is lit permanently to indicate the connection of supply voltage. If you do not want this LED lit, short-circuit the J adjacent to the output (+) for the LED strip.



Fig.2 - Setting the Mode



This symbol means that this product must not be disposed of together with ordinary domestic waste. Once its lifespan has expired, it must be disposed of at an appropriate collection point for recycling. For information on where to dispose of such items, please contact your waste collection service or the company from which you purchased this product.

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