



ISOLED KNOWLEDGE

**TIPPS FOR
CORRECTLY
SETTING THE
DIMMING
ACTUATORS**

ISOLED[®]

CUSTOMISED LIGHT SOLUTIONS



TIPS FOR CORRECTLY SETTING THE DIMMING ACTUATORS FROM ISOLED®

What is a dimming actuator?

Dimmable actuators (or dimming actuators) are usually called dimmers or dimmer switches. They are thyristor controllers or TRIAC controllers and are used to variably regulate the brightness of dimmable bulbs. The flowing current here is switched on and off via electronic circuits in a high frequency that is not visible to the human eye.

The ratio of the on and off durations defines the amount of light emitted by the bulb. A dimmer is therefore a transducer that changes the effective value of a sinusoidal voltage by truncating parts of the sine curve by a TRIAC.

90% of all dimming problems are due to minimum loads of the dimming actuators or dimmable transformers that are not taken into account.



Dimming limitation integrated

The dimming actuators from ISOLED® mentioned here have the function of limiting the lower dimming range to the range that an LED bulb or a transformer can be dimmed. If the lower threshold is fallen below with the connected switch, then the dimming actuator stops the dimming or cuts the power supply to the bulb.



Observe the dimming range of the dimming actuator or transformer

Specifications such as 20/300 W are usually found in the dimming specification. These define the performance draw behind the dimming actuator or the transformer and specify that the lower value, in this example 20 watt s, may not be fallen below. Otherwise the bulbs would begin to flicker.



Observe the dimming range of the bulb

In addition, it is essential to take the dimming range of the bulbs used into consideration. If you dim below the minimum value that is stipulated for the bulb used, then the bulb either begins to flicker or flash in this case as well.



80 % watt reduction ≠ 80 % lumen reduction

The performance reference is used as the permissible dimming range. This means, for example, for a „phase leading edge 20- 100% dimmable“ that a bulb with 5 watt s, for example, can be dimmed by a dimming actuator up to a performance draw of 1 watt . However, this does not mean that the bulb can be dimmed to 20% of its lumen output flawlessly! For certain bulbs, it is quite possible that the bulb at 20% of the power draw with 1 watt can still illuminate with 40% of its brightness (subjective assessment) and therefore still emit nearly 40% of the total lumen output with a fifth of its nominal power. This can in particular be observed with retrofit bulbs, but also with LED flex strips.





UNIVERSAL DIMMING ACTUATORS FROM ISOLED® - ALL ADVANTAGES AT A GLANCE



Compact design



Conventional push buttons suitable for switching and dimming



Potentiometer for selecting the lower dimming limit



Small dimensions



Overload and short circuit protection



Simple installation in the switch insert or fuse box



Suitable for all ohmic, inductive and capacitive load characteristics



Thermal circuit breaker



Memory function switchable

Universal dimming actuator Eltako for 230 V LED bulbs and transformers

The universal dimming actuator ELTAKO for 230 V LED bulbs and transformers (item no. 111881) has a very high performance and can be used universally

The AUTO mode for all load types without a minimum load / 400 W maximum load.

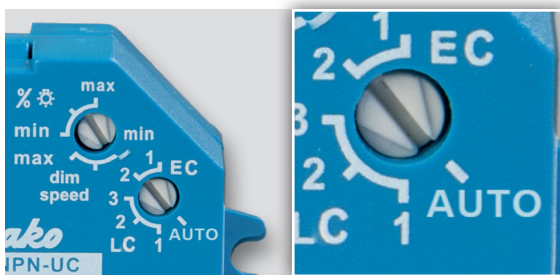
LC1 mode (with maximum load of 100 W) for LED bulbs that exhibit a problematic dimming behaviour in the AUTO mode and have to be forced to a leading edge

Optional LC2/LC3 with alternative dimming curves.

Control via closing switch (10 – 230 V); lower dimming range can be limited, dimming speed can be set, automatic load detection when set on „Auto“ after switching on and off twice.



Universal dimming actuator Eltako for 230 V LED lamps & transformers | Item Nr. 111881



Dimming actuators from ISOLED® have several adjusting options corresponding to the different loads. Usually the setting shown in the image can be used to easily dim 230 V LED bulbs and 230 V transformers. Setting: Mode AUTO for all load types without a minimum load / 400 W maximum load.

Recommendation

We recommend using a shielded, twisted so-called TWISTED PAIR CABLE when connecting the closing switch with the dimming actuator. A LAN cable (CAT5) can also be used for this purpose, although it is not intended for this specific purpose.

Reasoning

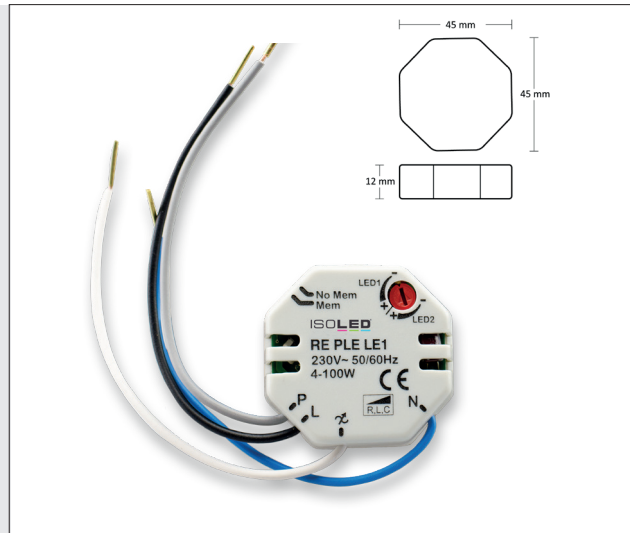
With a TWISTED PAIR CABLE, undesirable, independently occurring switch pulses are avoided, which can be triggered by self-induced voltages. This is sometimes caused by excessively long connecting cables between the switch and dimming actuator or by parallel running live wire



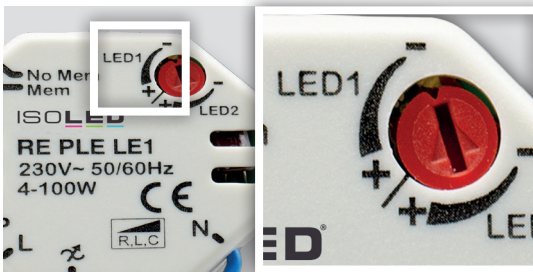
UNIVERSAL DIMMING ACTUATOR FOR 230 V LED BULBS AND TRANSFORMERS

The universal dimming actuator for 230 V LED bulbs and 12 V transformers from ISOLED® (item no. 112449) is small, compact and very easy to connect. In addition, it is possible to save the last set dimming level.

Mode LED1 for the leading edge dimmable 230 V LED bulbs with minimum load 4 W / maximum load 100 W; Mode LED2 for trailing edge (usually for transformers) with a maximum load of 300 W; Control via closing switch, the lower dimming range can be limited, last set dimming level remains preserved (selectable via Mem/No Mem).



Universal dimming actuator for 230 V LED bulbs and 12 V transformers
Item No. 112449



Dimming actuators from ISOLED® have several adjusting options corresponding to the different loads. Usually the setting shown in the image can be used to easily dim 230 V LED bulbs. Setting: Mode LED2 is ideal for 12/24 V transformers.

Recommendation

We recommend using a shielded, twisted so-called TWISTED PAIR CABLE when connecting the closing switch with the dimming actuator. A LAN cable (CAT5) can also be used for this purpose, although it is not intended for this specific purpose.

Reasoning

With a TWISTED PAIR CABLE, undesirable, independently occurring switch pulses are avoided, which can be triggered by self-induced voltages. This is sometimes caused by excessively long connecting cables between the switch and dimming actuator or by parallel running live wire.



Attention:

Do not mix capacitive and inductive loads!

No secondary-side load disconnection permissible!

The maximum performance should only be exhausted up to a maximum of 90%!



UNIVERSAL TOP HAT RAIL DIMMING ACTUATOR FOR 230 V LED BULBS AND 12 V TRANSFORMERS

Universal top hat rail dimming actuator for 230 V LED bulbs and 12 V transformers

Art.-No. 112450

The **universal top hat rail dimming actuator for 230 V LED bulbs and 12 V transformers** from ISOLED® (item no. 112450) has a high performance and is mounted directly onto the top hat rail. Several universal top hat rail dimming actuators can be synchronised.

Setting:

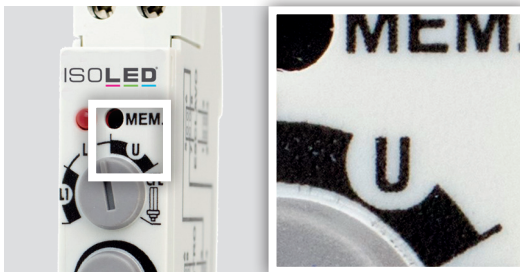
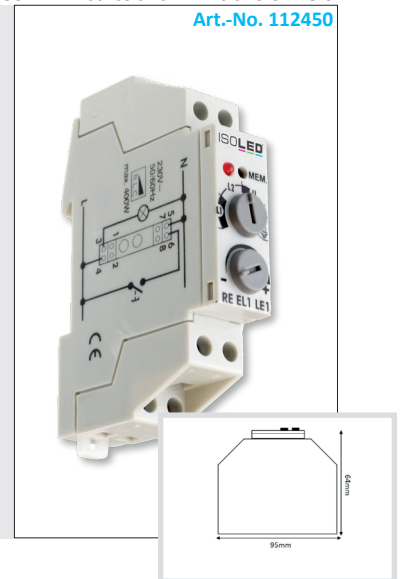
L1 (leading edge): Minimum load 4 W / maximum load 100 W;

L2 (trailing edge): Minimum load 10 W / maximum load 300 W;

U (universal): Minimum load 15 W / maximum load 250 W;

Note: Most dimmable 230 V LED bulbs work easily as capacitive or inductive load in the setting U.

Control via closing switch as a master or slave (for synchronous dimming), lower dimming range can be limited, U as universal mode for higher loads as well as CFL mode for energy saving lamps, L2 usually for transformers, L1 mode (with maximum load 100 W) for LED bulbs, which exhibit a problematic dimming behaviour in the U mode.



Dimming actuators from ISOLED® have several adjusting options corresponding to the different loads. Usually the setting shown in the image can be used to easily dim 230 V LED bulbs and 12 V transformers. Setting U (universal): Minimum load 15 W / maximum load 250 W.

Recommendation

We recommend using a shielded, twisted so-called TWISTED PAIR CABLE when connecting the closing switch with the dimming actuator. A LAN cable (CAT5) can also be used for this purpose, although it is not intended for this specific purpose.

Reasoning

With a TWISTED PAIR CABLE, undesirable, independently occurring switch pulses are avoided, which can be triggered by self-induced voltages. This is sometimes caused by excessively long connecting cables between the switch and dimming actuator or by parallel running live wire



Attention:

Do not mix capacitive and inductive loads!

No secondary-side load disconnection is permissible!

The maximum performance should only be exhausted up to a maximum of 90%!



THE MAXIMUM PERFORMANCE SHOULD ONLY BE EXHAUSTED UP TO A MAXIMUM OF 90%!

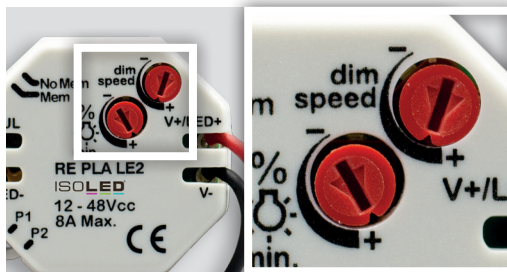
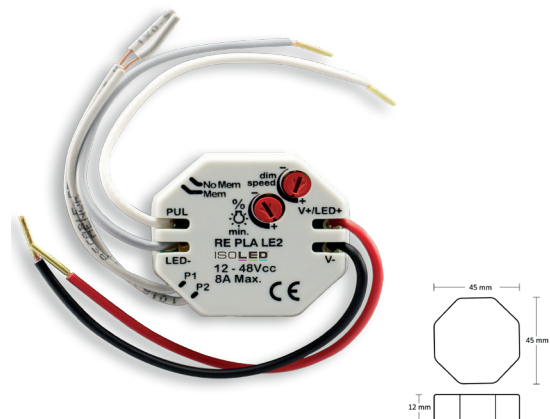
This universal dimming actuator from ISOLED® (item no. 112451) can be used both for low voltage LED bulbs as well as for 12/24 volt LED flex strips. It is small, compact in its design and very easy to connect. In addition to the optional memory function for the last dimming setting, this device has other functions, such as setting the dimming speed and the minimum dimming level.

Maximum load 96 W at 12 V

Maximum load 192 W at 24 V

Dimming possible at the touch of a button on either with 230 V or 12/24 V. The universal dimming actuator is connected between the transformer and the LED bulb (secondary-side dimming). Control via closing switch.

Universal dimming actuator for 12 V LED bulbs and 12/24 V LED flex strips
Item. No. 112451



Dimming actuators from ISOLED® have several adjusting options corresponding to the different requirements and loads. With the dimming actuator shown here (item no. 112451), the lower dimming range can be limited and the dimming speed can be set. The last selected dimming level is saved if „Mem“ is chosen (this function is disabled with „No Mem“).

Recommendation



We recommend using a shielded, twisted so-called TWISTED PAIR CABLE when connecting the closing switch with the dimming actuator. A LAN cable (CAT5) can also be used for this purpose, although it is not intended for this specific purpose.

Reasoning With a TWISTED PAIR CABLE, undesirable, independently occurring switch pulses are avoided, which can be triggered by self-induced voltages. This is sometimes caused by excessively long connecting cables between the switch and dimming actuator or by parallel running live wire



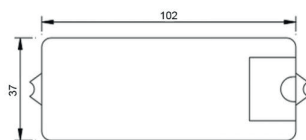
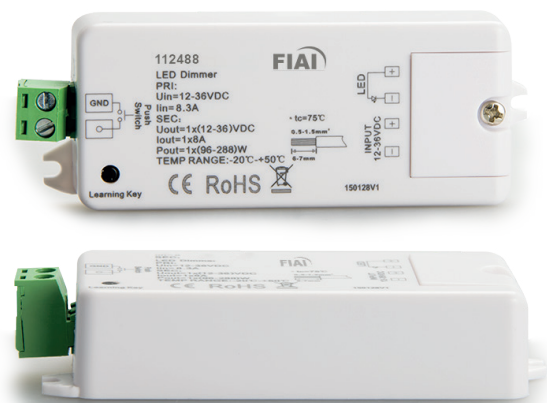


SYS-ONE WIRELESS AND PUSH/TOUCH DIMMING ACTUATOR, 1-CHANNEL, 12-36 V/DC

This wireless dimming actuator is part of the holistic LED lighting and control system SYS-ONE from ISOLED® and is accordingly compatible with SYS-ONE wireless controllers. (See controller illustrations) Suitable for use with interference-suppressed and non-interference suppressed transformers. This dimming actuator is connected between the transformers and the LED bulb (secondary dimming).

Special characteristic: Control possible via wireless AND/OR closing switch!

SYS-ONE Funk- und Push/Tast-Dimm-Aktor, 1-Kanal, 12-36 V/DC
Item no. 112488



Note

Up to 5 SYS-ONE wireless remote controls (compatible wireless controllers are shown below) can be programmed to one SYS-ONE wireless dimming actuator. A SYS-ONE wireless remote control can control up to 20 different SYS-ONE wireless dimming actuators, provided these are located in a wireless reception area of about 30 metres (depending on the building structure, the radius of the wireless reception area may vary).

Recommendation

We recommend using a shielded, twisted so-called TWISTED PAIR CABLE when connecting the closing switch with the dimming actuator. A LAN cable (CAT5) can also be used for this purpose, although it is not intended for this specific purpose.

Reasoning

With a TWISTED PAIR CABLE, undesirable, independently occurring switch pulses are avoided, which can be triggered by self-induced voltages. This is sometimes caused by excessively long connecting cables between the switch and dimming actuator or by parallel running live wire



Attention:

Do not mix capacitive and inductive loads!

No secondary-side load disconnection is permissible!

The maximum performance should only be exhausted up to a maximum of 90%!



SYS-ONE WIRELESS AND PUSH/TOUCH DIMMING ACTUATOR, 1-CHANNEL, 12-36 V/DC

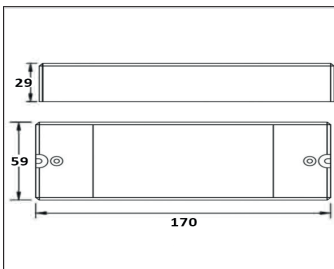
This wireless dimming actuator is part of the holistic LED lighting and control system SYS-ONE from ISOLED® and is accordingly compatible with SYS-ONE wireless controllers. (see controller illustrations).

Special characteristic:

With a wireless controller from the Sys-One series and/ or activated via the connected closing switch, this SYSONE wireless / push dimming actuator provides a 1- 10 V PWM signal with which LED bulbs and transformers can be dimmed with a corresponding control signal input (among others, ISOLED® hall lights from the MC series, for example have a corresponding interface on their transformer). In addition, a 5 V and 15 V PWM control signal for micro controllers, installation bus systems or houseautomation systems, for example, are optionally available.



Sys-One wireless/push dimmer for 1-10V control inputs, 230 V [Item No. 112711](#)



Note

Up to 5 SYS-ONE wireless remote controls (compatible wireless controllers are shown below) can be programmed to one SYS-ONE wireless dimming actuator. A SYS-ONE wireless remote control can control up to 20 different SYS-ONE wireless dimming actuators, provided these are located in a wireless reception area of about 30 metres (depending on the building structure, the radius of the wireless reception area may vary).

Recommendation

We recommend using a shielded, twisted so-called TWISTED PAIR CABLE when connecting the closing switch with the dimming actuator. A LAN cable (CAT5) can also be used for this purpose, although it is not intended for this specific purpose.

Reasoning

With a TWISTED PAIR CABLE, undesirable, independently occurring switch pulses are avoided, which can be triggered by self-induced voltages. This is sometimes caused by excessively long connecting cables between the switch and dimming actuator or by parallel running live wire

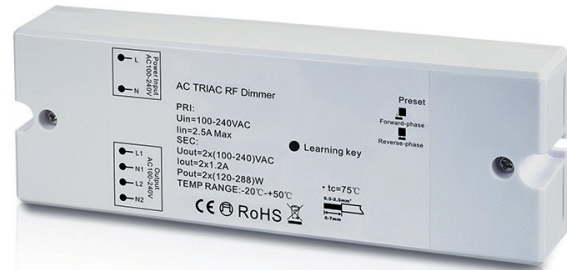
The SYS-ONE wireless dimming actuator is compatible with the controllers from the SYS-ONE series.



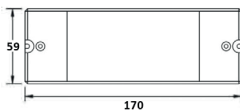
SYS-ONE WIRELESS DIMMING ACTUATOR 230 V, 2 X 288 W

This wireless dimming actuator is part of the holistic LED lighting and control system SYS-ONE from ISOLED® and is accordingly compatible with SYS-ONE wireless controllers. (See controller illustrations)

Leading edge or trailing edge TRIAC dimming can be selected via the jumper. Two output channels each 1.2 A = 2 x 288 W.



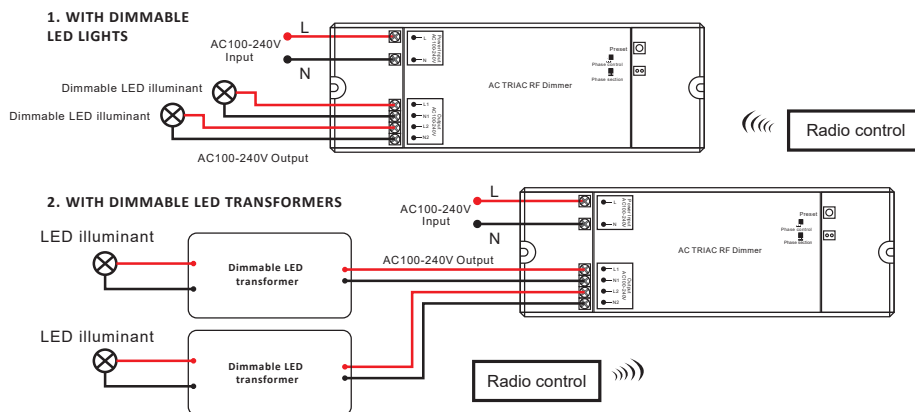
SYS-ONE wireless dimming actuator 230 V, 2 x 288 W
Item no.. 112699



Note

Up to 5 SYS-ONE wireless remote controls (compatible wireless controllers are shown below) can be programmed to one SYS-ONE wireless dimming actuator.

A SYS-ONE wireless remote control can control up to 20 different SYS-ONE wireless dimming actuators, provided these are located in a wireless reception area of about 30 metres (depending on the building structure, the radius of the wireless reception area may vary).



The SYS-ONE wireless dimming actuator is compatible with the controllers from the SYS-ONE series. Select here:



Item No.:
112490



Item No.:
112491



Item No.:
112493



Item No.:
112622



Item No.:
112494



Item No.:
112495



Item No.:
112492

