

Capacity enhancer LUD12-230V
for universal dimmer switches and
dimmer switches for PWM control



Only skilled electricians may install this electrical equipment otherwise there is the risk of fire or electric shock!

Temperature at mounting location:
-20°C up to +50°C.
Storage temperature: -25°C up to +70°C.
Relative humidity:
annual average value <75%.

Capacity enhancer for universal dimmer switches and dimmer switches for PWM control. Power MOSFET up to 400W. Standby loss 0.1 watt only.

Modular device for DIN-EN 60715
TH35 rail mounting.

1 module = 18mm wide, 58mm deep.

Capacity enhancers LUD12-230V can be connected to the Universal Dimmer Switches EUD12D, SUD12 (1-10 V input), FUD12/800W and to the multifunction time relay MFZ12PMD.

This increases the switching capacity **of a lamp** by up to 200W, and **of additional lamps** by up to 400W depending on the capacity enhancer and the ventilation conditions.

Dimmable energy saving lamps and dimmable 230V LED lamps are additionally dependent on the lamps electronics.

Both switching modes for increase of capacity can be executed simultaneously. Automatic lamp detection in switching "capacity enhancement **with additional lamps**".

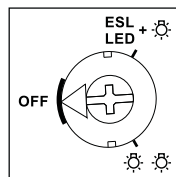
Supply voltage 230V.

Automatic electronic overload protection and over-temperature switch-off.

In the mode "Increase of capacity with additional lamps" the kind of load of a capacity enhancer LUD12-230V can vary from the kind of load of the universal impulse dimmer switch.

Therefore it is possible to mix L-loads and C-loads.

Function rotary switch

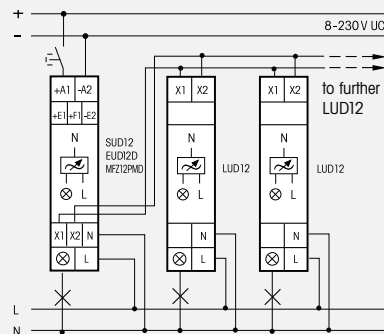


The switching mode "one lamp" (☼) or "additional lamps" (☼☼) is set with a rotary switch on the front.

This setting must be same as the actual installation, otherwise there is a risk of destruction of the electronics.

Different setting for ESL and 230V-LED, if the universal dimmer switch is operated in the comfort positions ESL and LED.

Increase of capacity with additional lamps (☼☼) - not ESL and LED



EUD12D, SUD12 and MFZ12PMD:

1.-8. LUD12 + up to 400W each

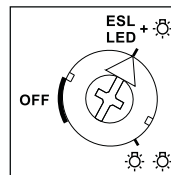
FUD12/800W:

1.-7. LUD12 + up to 400W each

Please refer to the deviations in connection examples for SUD12 and FUD12/800W in the operating instructions!

Capacity enhancement with capacity enhancers LUD12 for dimmable energy saving lamps ESL and dimmable 230V LED lamps in the comfort settings ESL and LED.

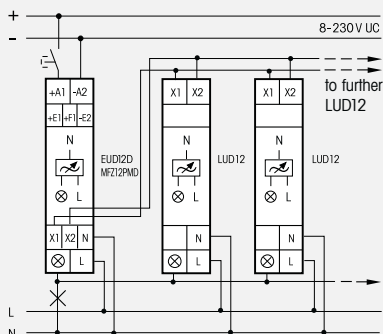
Function rotary switch



This setting must be set on the front of ESL and 230V LED lights when the universal dimmer switch is operated in the comfort settings ESL and LED. Also for capacity enhancement with additional lamps.

Also with power increase with additional lamps. **Otherwise there is a risk of destruction of the electronics.**

Increase of capacity for one lamp (☼) - not ESL and LED



EUD12D and MFZ12PMD:

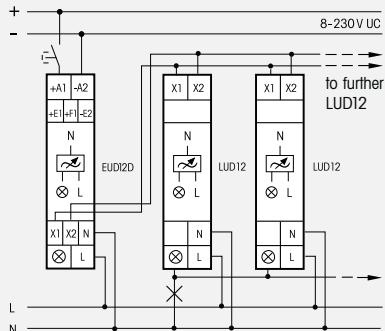
1.-9. LUD12 + up to 200W each

FUD12/800W:

1.-8. LUD12 + up to 200W each

For the FUD12/800W see the different connection example as per the operating instructions!

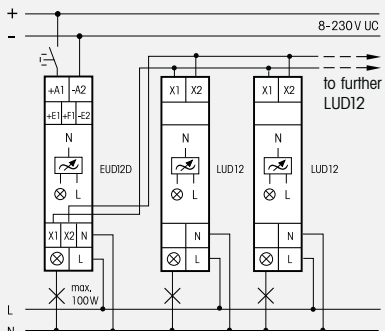
Increase of capacity for one lamp, ESL and 230 V LED



1.-9. LUD + up to 100W each

For the FUD12/800W see the different connection example as per the operating instructions!

Increase of capacity with additional lamps, ESL and 230V LED

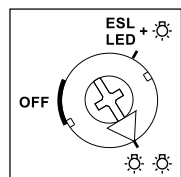


1.-9. LUD + up to 100W each

For the FUD12/800W see the different connection example as per the operating instructions!

LUD12 as universal dimmer switch for PWM control

Function rotary switch



In the mode "additional lamps" (⊗⊙⊙) the LUD12 can also be operated as an autonomous universal dimmer switch.

The control is at X1/X2 with a PWM signal, e.g. from a SPS. In accordance with the duty cycle, there is the output voltage of 0-100%.

In a LUD12 the control terminals X1/X2 are galvanically isolated by an optocoupler from the mains voltage.

The automatic load detection, the electronic overload protection and over-temperature shutdown are active and independently of the control.

Parameters of the PWM control:

Frequency	100Hz
Dutycycle	0 (= Off) in-line up to 90% (= complete output voltage)
Level	10-24 Volt (e.g. SPS output)
Actuating current	1 mA (10V) up to 3 mA (24V)
Connection polarity	X1 = +, X2 = - (Gnd), polarity protected
Galvanic isolation	by optocoupler

Technical data

Incandescent and halogen lamps ¹⁾ 230V (R)	up to 400W ⁶⁾
Inductive transformers (L)	up to 400W ²⁾³⁾⁶⁾
Electronic transformers (C)	up to 400W ²⁾³⁾⁶⁾
Dimmable energy saving lamps ESL	up to 400W ⁵⁾⁶⁾
Dimmable LEDs	up to 400W ⁵⁾⁶⁾
Max./min. temperature at mounting location	+50°C/-20°C ⁴⁾

Standby loss (activ power) 0.1W

¹⁾ For lamps with a maximum of 150W.

²⁾ Per dimmer or capacity enhancer it is only allowed to use max. 2 inductive (wound) transformers of the same type, furthermore no-load operation on the secondary part is not permitted. Possibly the dimmer switch will be destroyed! No load-switching-off on the secondary part is allowed. The parallel operation of inductive (wound) and capacitive (electronic) transformers is not allowed!

- ³⁾ When calculating the load 20% loss has to be considered for inductive (wound) transformers and 5% loss in addition to the lamp load.
- ⁴⁾ Affects the maximum switching power.
- ⁵⁾ Usually applies for dimmable energy saving lamps and dimmable 230V LEDs. Due to differences in the lamps electronics, there may be limited dimming range, switch on and off problems dependent on the manufacturer and a restriction on the maximum number of lamps; especially if the connected load is very low (for 5W-LEDs). If the universal dimmer switch is operated in the comfort settings ESL and LED, it only gives a maximum power up to 100W.
- ⁶⁾ With a load of more than 200W, a ventilation distance of ½ module to adjacent devices must be maintained.



The strain relief clamps of the terminals must be closed, that means the screws must be tightened for testing the function of the device. The terminals are open ex works.

Must be kept for later use!

We recommend the housing for operating instructions GBA12.

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49/2017 Subject to change without notice.