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Digital settable multifunction universal dimmer switch EUD12D-UC

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%.

! Note: Select English language !*
Universal dimmer switch. Power MOSFET up to 400W. Automatic lamp detection. Standby loss 0.3 watt only. With adjustable minimum brightness, maximum brightness and dimming speed. With switching operation for children's rooms and snooze function.

Modular device for DIN EN 60715 TH35 rail mounting. 1 module = 18 mm wide, 58 mm deep.

Universal dimmer switch for lamps up to 400 watt, dependent on the ventilation conditions. Dimmable energy saving lamps and dimmable 230V LED lamps are additionally dependent on the lamps electronics and the dimming technology.

Up to 3600 W with capacity enhancers LUD12-230V at the terminals X1 and X2.

Universal control voltage 12 to 230 V UC and additionally the universal voltage control inputs 8 to 230 V UC central ON and central OFF. The control inputs are electrically isolated from the supply voltage and switching voltage.

Zero passage switching with soft start and soft OFF to protect lamps.

In case of a power failure the switching position and the brightness level are stored. If applicable the dimmer will be switched on at the stored brightness level after the supply voltage is recovered.

From 110V control voltage glow lamp current up to 5mA (not for DSD).

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

The functions and times are entered using the MODE and SET keys and indicated on the LC display.

A keylock function is provided.

The automatic operation settings EUD, DSD, Udo, STS, MIN, MMX, CG and R **allow dimming of all lamp types.**

Mixing of L loads (inductive loads, e.g. wound transformers) and C loads (capacitive loads, e.g. electronic transformers) is not permitted. R loads (ohmic loads, e.g. 230V incandescent lamps and halogen lamps) may be added anytime.

Mixing of L loads and C loads is possible with dimmer switch **EUD12D** in connection with capacity enhancer **LUD12**.

Technical data

Dimmable 230V LED lamps	Trailing edge up to 400 W ⁵⁾⁶⁾
	Leading edge up to 100 W ⁵⁾⁶⁾
Incandescent and halogen lamps ¹⁾ 230V (R)	up to 400 W ⁶⁾
Inductive transformers (L)	up to 400 W ²⁾³⁾⁶⁾
Electronic transformers (C)	up to 400W ²⁾³⁾⁶⁾
Dimmable LEDs	up to 400 W ⁵⁾⁶⁾
Max./min. temperature at mounting location	+50°C/-20°C ⁴⁾
Standby loss (activ power)	0.3 W

¹⁾ For lamps with a maximum of 150W.

²⁾ Per dimmer 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). The comfort settings optimize the dimming range which, however, gives only a maximum power up to 100W. In these comfort settings no inductive (wound) transformers should be dimmed.

⁶⁾ With a load of more than 200W, a ventilation distance of ½ module to adjacent devices must be maintained.

How to operate the EUD12D-UC with display

* After you switch on the power supply (or the power supply is switched on after a power failure), the top line of the display indicates the **language setting**. It flashes for 10 seconds:

D = German, GB = English, F = French, IT = Italian and ES = Spanish.

During this time, press SET to make changes, press MODE to save and then switch over to normal display.

Press MODE to activate the setting mode.

The function abbreviation of the current function starts to flash in the top line of the display. Each time you press SET, you move to the next flashing function. **This is the function sequence: EUD, DSD, Udo, STS, MIN, MMX, CG, R, ON and OFF.** Press MODE on the requested function to end the flashing function. Then set by pressing MODE+SET.

Retain and only change a function: Press MODE twice.

When you select a function by pressing MODE, the first submenu option (Parameters) of the corresponding function flashes. Press SET to change the function. When you press SET briefly, the parameter increments step by step. When you press the button for longer, the parameter increments faster through to the maximum value. The display then restarts from the minimum parameter value. When you press the button for longer after a rapid forward runup, the display reverses and the digits decrement to the minimum parameter value. Press MODE again to change to the next parameter of the activated function. After the last parameter, exit the setting mode by pressing MODE. The device is then ready to operate with the corresponding function.

Description of the individual functions and their setting parameters:

Function 'EUD' = Universal dimmer switch with settings for dimming speed, minimum brightness, maximum brightness, memory and Soft ON/OFF as well as choice of priority for central control. ESL or LED is settable. Short-time control commands switch on/off, permanent control varies the brightness to

the maximum level. An interruption of control changes the direction of dimming.

ESL is a comfort setting for energy saving lamps which by design have to be switched on with an increased voltage, so they will also switch on again safely in cold condition when dimmed down. Memory has to be switched off for energy saving lamps which by design cannot be switched on again after dimming.

LED is a comfort position for dimmable 230V LED lamps which by design are not being dimmed down enough when set to automatic mode (trailing phase angle) and must therefore be forced to leading phase angle.

3 dimming curves are available. **In positions ESL and LED no inductive (wound) transformers should be used.** In addition the maximum number of lamps may be lower by design than in automatic mode.

Switching operation for children's rooms:

If the light is switched on by holding down the pushbutton, it starts at the lowest brightness level after approx. 1 second and dims up slowly as long as the pushbutton is held down without modifying the last stored brightness level.

Snooze function: With a double impulse the lighting is dimmed down from the current dimming position to the minimum brightness level and switched off. The current dimming position as well as the adjustable minimum brightness level determine the dimming time (max. = 60 minutes) which can be reduced as required. It can be switched off at any time by short-time control commands during the lighting is dimmed down. Holding down the pushbutton during the dimming down process dims up and stops the snooze function.

'EUD' function parameters:

DSP: Sets from 'dim speed' of 1 (slow) to 9 (fast).

MI%: Sets the minimum brightness from 3 (minimum) to 50 (half brightness).

MA%: Sets maximum brightness from 50 (half brightness) to 99 (full brightness) (MA%-MI% ≥ 20).

MEM: Memory function. If a '+' sign is set behind MEM, then the memory function is active, otherwise it is inactive. (switching on at maximum brightness)

SO: Soft On and Soft OFF from 1 (quick) to 5 (slow).

ESL: ESL function. If a '+' sign is set behind

ESL, then switch-on and dimming are in ESL mode. If you select ESL by pressing '+', the 'LED' parameter is skipped.

LED: LED function. If a '+' sign is set behind LED, dimming takes place using the LED curve 1, 2 or 3 selected in the second line.

PRI: Selects the priority from 1 to 8.

A decision must also be made here on how the EUD12D should respond if **the power supply fails and is restored:**

If you choose 1 to 4, the switch position and brightness level are saved in the event of a power failure and may be switched on when the power supply is restored.

If you choose 5 to 8, only the brightness level is saved in the event of a power failure and the switch position remains definitely off when the power supply is restored.

1 and 5 = No priority. Also if central control inputs are excited permanently, it is possible to operate the device by pushing a local pushbutton. The last central command is executed. This is the setting ex works.

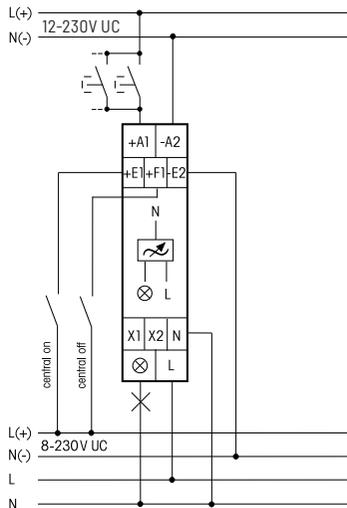
2 and 6 = Priority for central ON and OFF. Local pushbuttons are temporarily inhibited. However, continuous excitation central OFF has priority over continuous excitation central ON.

3 and 7 = Priority for central ON and OFF. Local pushbuttons are temporarily inhibited. However, continuous excitation central ON has priority over continuous excitation central OFF.

4 and 8 = Priority for permanently excited local pushbutton. In the meantime central commands are not executed. In these positions a glow lamp current is not permitted.

Cla: Selects the central control inputs.
boCI = Both central inputs are active.
noCI = No central input is active.
Coff = Only Central OFF is active, and
Con = Only Central ON is active.

Typical connection EUD



Function 'DSD' = Same as universal dimmer switch EUD but also comprising activation via two direction switches on the universal voltage control inputs 8..230 V UC.

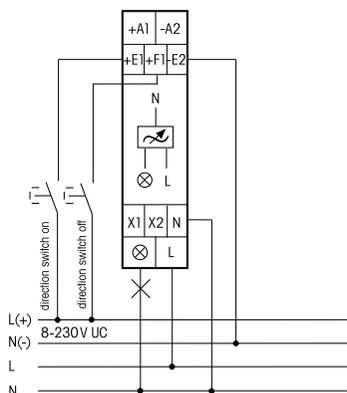
Switching on and dimming up on + E1 and switching off and dimming off on +F1.

A double-click on the switching on side activates automatic dimming up to full brightness with dim-speed velocity. A double-click on the switching off side activates the snooze function. The children's room function is activated on the switching on side.

'DSD' function parameters:

DSP, MI%, MA%, MEM, SO, ESL and **LED**. The settings are described under 'EUD function parameters'.

Typical connection DSD



Function 'Udo' = Same as universal dimmer switch EUD but also comprising setting for a time delay from 1 to 99 minutes. Switch-off early warning at the end by dimming is selectable and adjustable from 1 to 3 minutes. The two central inputs are active.

'Udo' function parameters:

DSP, MI%, MA%, MEM, SO, ESL and **LED**.

The settings are described under 'EUD function parameters', in addition **TIM** and **SEW** are settable.

TIM = Sets the time delay from 1 to 99 minutes in steps of 0.5 minute for a time delay up to 10 minutes. Then up to 99 minutes in steps of 1 minute.

SEW = Sets the switch-off early warning from 0 to 3 minutes in steps of 1 minute.

Function 'STS' = Staircase time switch with switchable switch-off early warning by dimming. With pump and permanent light by pushbutton. Time adjustable from 1 to 99 minutes. Switch-off early warning (no flickering) by dimming is adjustable from 1 to 3 minutes. Also for dimmable energy saving lamps ESL and 230V LED lamps. The two central inputs are active.

'STS' function parameters:

TIM = See 'ESV' parameter supplemented by TIM by pumping up to 3 times.

SEW = See 'ESV' parameter; dimming starts after the time delay set in STS.

PLP = Sets the button continuous light from 0 to 10 hours in steps of 0.5 hour. Then up to 99 minutes in steps of 1 minute. Activate by pressing the button for longer than 1 second (flashes once); deactivate by pressing the button for longer than 2 seconds.

ESL = SEW and acknowledgement impulse for button continuous light are modified to ESL.

LED: LED function with '+' behind LED.

Function 'MIN' = Universal dimmer switch, switches when control voltage is applied to the minimum brightness setting. Maximum brightness is dimmed during the set dim time from 1 to 99 min-utes. When the control voltage is interrupted, the device is switched off immediately, even during the dim time. The two central inputs are active.

'MIN' function parameters:

TIM, MI%, MA% and **LED**.

The settings are described under 'Udo function parameters'.

Function 'MMX' = Same function as for MIN; when the control voltage is interrupted, dimming still continues until the set minimum brightness is reached. Then the device is switched off.

Function 'CG' = Clock with adjustable switch on/off times from 0.1 to 9.9 seconds. The maximum brightness is adjustable from 3 to 99%.

'CG' function parameters:

Ton = Impulse time ON from 0.1 to 9.9 seconds in steps of 0.1 seconds.

Tof = Impulse time OFF from 0.1 to 9.9 seconds in steps of 0.1 seconds.

BR% = Switch-on brightness from 3 (minimum brightness) to 99 (maximum brightness).

LED: LED function with '+' behind LED.

Function 'R' = Switching relay with setting for Soft ON/OFF from 0.1 to 9.9 seconds. The maximum brightness is adjustable from 3 to 99%.

'R' function parameters:

BR% = Same as 'CG' parameter.

Ton = Dim-up switch-on time from 0.1 to 9.9 seconds in steps of 0.1 seconds.

Tof = Dim-down switch-off time from 0.1 to 9.9 seconds in steps of 0.1 seconds.

LED: LED function with '+' behind LED.

Function 'ON' = permanent ON

Function 'OFF' = permanent OFF

Display function of the LC display:

the operational shortcut of the selected function will be displayed at the top. The dimming position (%) will be displayed in the middle at EUD and DSD in the on-state. The time will be displayed in the middle at functions with timing. In the on-state an arrow shows the lamp symbol in the upper left corner.

The accrued switch-on time is continuously displayed at the bottom. At first in hours (h) and then in months (m) with one digit behind the decimal point.

The progressive switch-on time is reset to 0

Press MODE and SET simultaneously for 2 seconds. The bottom line in the display flashes. Press SET to reset to 0.

Safety on power failure: the set parameters will be safed in a EEPROM and are immediately available once power is restored.

Lock and unlock

If the automatic function is active (no element is flashing), the setting can be locked against unintentional adjustment and then unlocked. As long as it is locked, an arrow at the top right of the display points to a lock icon on the front panel.

Lock: Press MODE and SET simultaneously and briefly. **LCK** flashes. Lock by pressing SET.

Unlock: Press MODE and SET simultaneously for 2 seconds. **UNL** flashes. Unlock by pressing SET.

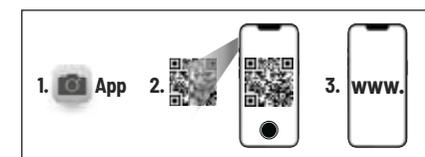


The strain relief clamps of the terminals must be closed, that means the screws must be tightened for testing the function of the device. The terminals are open ex works.

Manuals and documents in further languages:



<http://eltako.com/redirect/EUD12D-UC>



Must be kept for later use!

We recommend the housing for operating instructions GBA14.

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