Eltako
ELECTRONICS

Digital settable multifunction universal dimmer switch EUD12D-UC

CE

valid for devices from production week 10/2011
(see bottom side of housing)

! Note: Select English language !*

Power MOSFET up to 400 W. Energy saving lamps ESL up to 100 W and LED up to 100 W. 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 R, L and C loads up to 400 watt, depending on ventilation conditions. Dimmable energy saving lamps ESL up to 100 watt and dimmable 230V LED lamps up to 100W. Automatic detection of load R+L or R+C. ESL and LED is manually settable.

Up to 3400 W with capacity enhancers LUD12-230 V at the terminals X1 and X2.
Universal control voltage 8 to 230V UC and additionally the universal voltage control inputs 8 to 230V 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 5 mA (not for DSD, R and CG).

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.

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 switches **EUD12Z** and **EUD12D** in connection with capacity enhancer **LUD12.**

Tecnical data

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

[1] At a load of more than 200 W ventilation clearance of 1/2 module to adjacent devices must be maintained.

[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. The dimmer might be destroyed. Therefore do not permit load breaking on the secondary part.

[3] **When calculating the load a loss of 20% for inductive (wound) transformers and a loss of 5% for capacitive (electronic) transformers must be considered in addition to the lamp load.**

[4] Affects the max. switching capacity.

[5] In the settings ESL and LED no wound (inductive) transformer must be dimmed.

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.

The setting ESL considers the special conditions regarding dimmable energy saving lamps: The starting curve is optimized and adapted to the dimming curve. In these settings the special switching operation for children's rooms is not possible and no wound (inductive) transformer must be dimmed. It may be beneficial to switch off the memory on the ESL, because cold energy saving lamps require a higher minimum brightness as it will possibly be stored in Memory for warmer energy saving lamps.

The settings LED take account of special conditions with dimmable 230V LED lamps: A number of different dimming curves are available. An updated list with dimming curve assignment for commercially available dimmable 230V LED lamps is ready for downloading at **www.eltako.com/ dimming_curve/LED_gb.pdf.** In these settings no wound (inductive) transformer must be dimmed.

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% $\geq$ 20).

MEM: Memory function. If a "+" sign is set behind MEM, then the memory function is active, otherwise it is inactive.

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.
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.
boCl = Both central inputs are active.
noCl = No central input is active.
Coff = Only Central OFF is active, and
Con = Only Central ON is active.
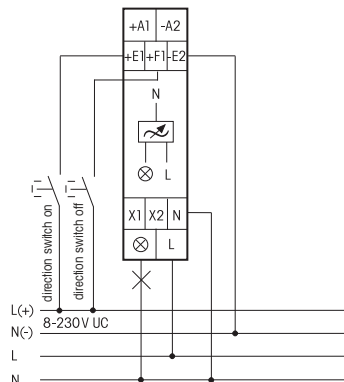
Typical connection EUD
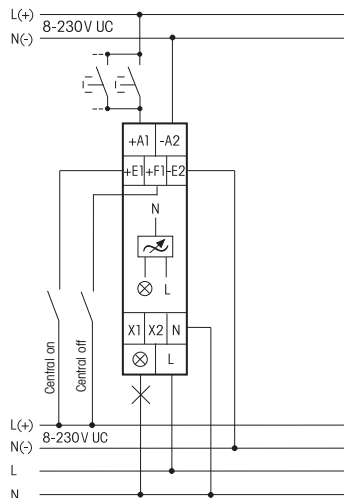
Function 'DSD' = Same as universal dimmer switch EUD but also comprising activation via two direction switches on the universal voltage control inputs 8..230 V UC.

'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 230 V 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 minutes. 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

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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

The progressive switch-on time is continuously indicated. First in hours (h), then in months (m) with 1 digit after 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.

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.

Important Note!

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