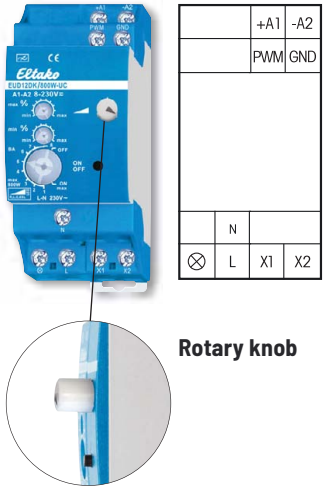
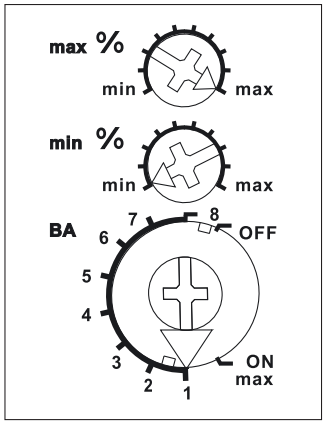


EUD12DK/800W-UC

Universal dimmer switch with rotary knob, Power MOSFET up to 800 W. Automatic lamp detection. Standby loss 0.2 watt only. With adjustable minimum and maximum brightness.

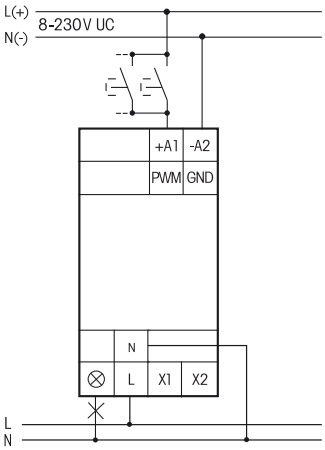
Modular device for DIN EN 60715 TH35 rail mounting. 2 modules = 36 mm wide, 58 mm deep.
Universal dimmer switch for lamps up to 800 W, depending on ventilation conditions, dimmable 230 V LED lamps and dimmable energy saving lamps (ESL) are also dependent on the lamp electronics and the dimming technology, **see Technical data page 9-22.**
Up to 3600W with capacity enhancers LUD12 at the terminals X1 and X2.
Zero passage switching with soft start and soft OFF to protect lamps.
Universal control voltage input 8 to 230 V UC, electrically isolated from the 230 V supply voltage and switching voltage. No minimum load required.
Alternatively, PWM control with 10-24 V DC at the PWM and GND connections.
The setting of the brightness level is stored after switching off (Memory).
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.
Automatic electronic overload protection and over-temperature switch-off.
Maximum brightness (fully dimmed up) is adjustable using the upper % rotary switch.
Use the middle % rotary switch to set the minimum brightness (fully dimmed down).
The lower rotary switch sets the operating mode:
ON: Permanent ON at maximum brightness.
Pos. 1 is an AUTO position and allows the dimming of all lamp types. Switch on and off using pushbutton on the device and/or pushbutton connected to +A1/-A2. Dimming via rotary knob.
Pos. 2 is a comfort setting for dimmable 230 V LED lamps which cannot be dimmed down far enough on AUTO (phase cut-off) due to the design and must therefore be forced at phase control. Switch on and off using pushbutton on the device and/or pushbutton connected to +A1/-A2. Dimming via rotary knob.
Pos. 3 is a comfort setting for energy saving lamps which must be switched on at a higher voltage so that they can be safely switched on cold when they are dimmed down. Switch on and off using pushbutton on the device and/or pushbutton connected to +A1/-A2. Dimming via rotary knob.
Pos. 4 is an AUTO position and allows the dimming of all lamp types. Switch on and off using switch connected to +A1/-A2. Dimming via rotary knob.
Pos. 5 is a comfort setting for dimmable 230 V LED lamps which cannot be dimmed down far enough on AUTO (phase cut-off) due to the design and must therefore be forced at phase control. Switch on and off using switch connected to +A1/-A2. Dimming via rotary knob.
Pos. 6 is a comfort setting for energy saving lamps which must be switched on at a higher voltage so that they can be safely switched on cold when they are dimmed down. Switch on and off using switch connected to +A1/-A2. Dimming via rotary knob.
Pos. 7 is an AUTO position and allows the dimming of all lamp types. Switch on and off and dimming with PWM activation.
Pos. 8 is a comfort setting for dimmable 230 V LED lamps which cannot be dimmed down far enough on AUTO (phase cut-off) due to the design and must therefore be forced at phase control. Switch on and off and dimming with PWM activation.
In positions 2, 3, 5, 6 and 8 no inductive (wound) transformers should be used.
OFF: Permanent OFF.
The LED under the upper rotary switch lights up when the lamp is switched on.

Function rotary switches



Standard setting ex works.

Typical connection



Manuals and documents in further languages:
https://eltako.com/redirect/EUD12DK*800W-UC

Technical data page 9-22.
Housing for operating instructions GBA14 page 1-48 chapter 1.

EUD12DK/ 800W-UC	Universal dimmer switch, Power MOSFET up to 800 W	**Art. No. 21100810**	

Recommended retail prices excluding VAT.

UNIVERSAL DIMMER SWITCHES, CAPACITY ENHANCERS AND 1-10 V CONTROLLERS

Type	EUD12NPN[1)] EUD12D[1)] EUD12DK[1)] LUD12[1)] MFZ12PMD[1)]	EUD61NPN[1)] EUD61M[1)] EUD61NP[1)] EUD61NPL[1)]	EUD12F[1)]	EUD12NPN-BT[1)]
Spacing of control connections/load	6 mm	6 mm EUD61NP: 3 mm	6 mm	6 mm
Incandescent and halogen lamps 230 V (R)	up to 400 W EUD12DK: up to 800 W	up to 400 W EUD61NPL: 200 W	up to 300 W	EUD12NPN-BT/300W-230V: 300W EUD12NPN-BT/600W-230V: 600W
Inductive transformers (L)[2)3)]	up to 400 W EUD12DK: up to 800 W	up to 400 W (not EUD61NPL)	up to 300 W	EUD12NPN-BT/300W-230V: 300W EUD12NPN-BT/600W-230V: 600W
Motor (L)	–	–	–	–
Capacative transformers (C)[3)8)]	up to 400 W EUD12DK: up to 800 W	up to 400 W EUD61NPL: 200 W	up to 300 W	EUD12NPN-BT/300W-230V: 300W EUD12NPN-BT/600W-230V: 600W
Dimmable 230 V LED lamps[5)6)9)]	Trailing edge up to 400 W Leading edge up to 100 W EUD12DK: Trailing edge up to 800 W Leading edge up to 200 W	Trailing edge up to 400 W, NPL: 200 W Leading edge up to 100 W, NPL: 40 W (not EUD61NP)	up to 300 W	EUD12NPN-BT/300W-230V: 300W EUD12NPN-BT/600W-230V: 600W
Dimmable LED lamps 12-36 V DC	–	–	–	–
1-10 V EVG	–	–	–	–
Maximum conductor cross-section (3-fold terminal)	6 mm² (4 mm²)	4 mm²	6 mm² (4 mm²)	6 mm²
Two conductors of same crosssection (3-fold terminal)	2.5 mm² (1.5 mm²)	1.5 mm²	2.5 mm² (1.5 mm²)	2.5 mm²
Screw head	slotted/crosshead, pozidriv	slotted/crosshead	slotted/crosshead, pozidriv	slotted/crosshead, pozidriv
Type of enclosure/terminals	IP50/IP20	IP30/IP20	IP50/IP20	IP50/IP20
Time on	100%	100%	100%	100%
Max./min. temperature at mounting location [4)]	+50°C/-20°C	+50°C/-20°C	+50°C/-20°C	+50°C/-20°C
Standby loss (active power)	0.2 W LUD12: 0.1 W EUD12D und MFZ12PMD: 0.3 W	0.2 W EUD61M: 0.1 W EUD61NPL, EUD61NP: 0.5 W	0.5 W	0.3 W
Control voltage	12..230 V UC EUD12NPN/110-240V: 110-240 V AC	8..230 V UC EUD61NPN-230 V und EUD61NP: 230 V	internal DC voltage	230 V
Glow lamp current	5mA EUD12DK: - EUD12NPN/110-240V: -	-	-	-
Control current 230 V-control input (<5 s)	–	EUD61NP: 0.7 mA EUD61NPN-230V: 4(100) mA	-	2.2 mA
Control current universal control voltage all control voltages (<5 s) 8/12/24/230 V (<5 s)	10(100) mA –	– 2/3/7/4(100) mA	– –	-
Control current central 8/12/24/230 V (<5 s)	3/5/10/4(100) mA	–	–	-/-/-/2(100) mA
Max. parallel capacitance (approx. length) of single control lead at 230 V AC	0.9 µF (3000 m)	0.9 µF (3000 m) EUD61NP: 0.3 µF (1000 m)	-	0.3 µF (1000m)
Max. parallel capacitance (approx. length) of central control lead at 230 V AC	0.9 µF (3000 m)	–	-	0.3 µF (1000m)

* EVG = electronic ballast units; KVG = conventional ballast units [a)] Secondary cable length with a maximum of 2 m. [1)] For loads exceeding half the respective rated load, a ventilation distance of ½ module must be maintained from adjacent devices. For the EUD61, the switching capacity also depends on the ventilation conditions. [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. The dimmer might be destroyed.** Therefore do not permit load breaking on the secondary part. Operation in parallel of inductive (wound) and capacative (electronic) transformers is not permitted! **[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 LED and ESL no wound (inductive) transformer must be dimmed. [6)] Increase of capacity for dimmable 230 V LED lamps and dimmable energy saving lamps ESL see page 9-10. [7)] Only 1 fan motor may be connected. [8)] For LED and 12 V halogen lamps. [9)] Usually applies to 230 V LED lamps. Different lamp electronics may result in restricted dimming areas, on/off problems and a limited maximum number of lamps (up to 10 units), especially if the connected load is very low (e.g. with 5 W LEDs). The comfort positions of the dimmer switches optimize the dimming range, which, however, only gives a maximum power up to 100 W. No inductive (wound) transformers may be dimmed in these comfort positions.

Compliance with: EN 61000-6-3, EN 61000-6-1 and EN 60 669

UNIVERSAL DIMMER SWITCHES, CAPACITY ENHANCERS AND 1-10 V CONTROLLERS

Type	ELD61[a)]	SDS12 SUD12	SDS61	MOD12D
Spacing of control connections/load	6 mm	6 mm	3 mm	6 mm
Incandescent and halogen lamps 230 V (R)	–	–	–	–
Inductive transformers (L)[2)3)]	–	–	–	–
Motor (L)	–	–	–	up to 300 W [7)]
Capacative transformers (C)[3)8)]	–	–	–	–
Dimmable 230 V LED lamps[5)6)9)]	–	–	–	–
Dimmable LED lamps 12-36 V DC	ELD61: 7,5 A	–	–	–
1-10 V EVG	–	40 mA 600 VA	40 mA 600 VA	–
Maximum conductor cross-section (3-fold terminal)	4 mm^2	6 mm^2 (4 mm^2)	4 mm^2	6 mm^2 (4 mm^2)
Two conductors of same crosssection (3-fold terminal)	1,5 mm^2	2.5 mm^2 (1.5 mm^2)	1.5 mm^2	2.5 mm^2 (1.5 mm^2)
Screw head	slotted/crosshead	slotted/crosshead, pozidriv	slotted/crosshead	slotted/crosshead, pozidriv
Type of enclosure/terminals	IP30/IP20	IP50/IP20	IP30/IP20	IP50/IP20
Time on	100%	100%	100%	100%
Max./min. temperature at mounting location [4)]	+50°C/-20°C	+50°C/-20°C	+50°C/-20°C	+50°C/-20°C
Standby loss (active power)	0.1 W	0.5 W	0.5 W	0.3 W
Control voltage	12..230 V UC	8..230 V UC	230 V	12..230 V UC
Glow lamp current	–	–	–	–
Control current 230 V-control input (<5 s)	–	–	0.5 mA	–
Control current universal control voltage all control voltages (<5 s) 8/12/24/230 V (<5 s)	– 2/3/7/4(100) mA	– 3/5/10/4(100)mA	– –	2/3/8/5(100)mA –
Control current central 8/12/24/230 V (<5 s)	–	3/5/10/4(100)mA	–	2/3/8/5(100)mA
Max. parallel capacitance (approx. length) of single control lead at 230 V AC	0.3 µF (1000m)	0.3 µF (1000 m)	0.06 µF (200 m)	0.9 µF (3000 m)
Max. parallel capacitance (approx. length) of central control lead at 230 V AC	–	0.3 µF (1000 m)	–	0.9 µF (3000 m)

* EVG = electronic ballast units; KVG = conventional ballast units [a)] Secondary cable length with a maximum of 2 m. [1)] For loads exceeding half the respective rated load, a ventilation distance of ½ module must be maintained from adjacent devices. For the EUD61, the switching capacity also depends on the ventilation conditions. [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. The dimmer might be destroyed.** Therefore do not permit load breaking on the secondary part. Operation in parallel of inductive (wound) and capacative (electronic) transformers is not permitted! **[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 LED and ESL no wound (inductive) transformer must be dimmed. [6)] Increase of capacity for dimmable 230 V LED lamps and dimmable energy saving lamps ESL see page 9-10. [7)] Only 1 fan motor may be connected. [8)] For LED and 12 V halogen lamps. [9)] Usually applies to 230 V LED lamps. Different lamp electronics may result in restricted dimming areas, on/off problems and a limited maximum number of lamps (up to 10 units), especially if the connected load is very low (e.g. with 5 W LEDs). The comfort positions of the dimmer switches optimize the dimming range, which, however, only gives a maximum power up to 100 W. No inductive (wound) transformers may be dimmed in these comfort positions.

According to DIN VDE 0100-443 and DIN VDE 0100-534, the installation of a surge arrester (SPD) is mandatory.
ELTAKO offers suitable, standard-compliant surge arresters of types 1, 2, and 3 – see Chapter 8, "Surge Arresters."

Compliance with: EN 61000-6-3, EN 61000-6-1 and EN 60 669