**Eltako**
ELECTRONICS

Wireless actuator

CE

PWM LED dimmer switch FLD61

**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%.

PWM LED dimmer switch for LEDs up to 12-36V DC, 4A. Only 0.2-0.4 watt stand-by loss. With adjustable minimum brightness and dimming speed. With switching operation for children's rooms and snooze function. Also with light scene control by PC or wireless pushbuttons. Bidirectional wireless and with repeater function.
For installation.
45mm long, 55mm wide, 33mm deep.
supply voltage 12 to 36V DC, depending on the connected LED lighting.
Output voltage PWM (puls width modulation).
Maximum output voltage 4A.
A pulse resistant DC power supply unit is required, which provides the necessary voltage and required current of the LED light(s).
**Universal control voltage input 8 to 230V UC,** electrically isolated from the 230V supply voltage and switching voltage.
The brightness level is stored on switch-off (memory).
In case of a power failure the switch position and the brightness stage are stored and may be switched on when the power supply is restored.
Automatic electronic overload protection and overtemperature switch-off.
**Bidirectional wireless** and/or a **repeater** function can be switched on.

**Function rotary switches**
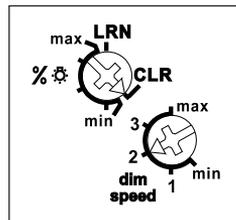


The minimum brightness (fully dimmed) is adjustable **with the upper %☼ rotary switch.** In the setting LRN up to 35 push-buttons can be assigned, of which one or more central pushbuttons.
The dimming speed can be adjusted **with the lower dimming speed rotary switch**.
In addition to the wireless control input via an internal antenna, this universal dimmer switch can also be controlled locally by a conventional 230V control switch if fitted previously. A short interruption of control changes the direction of dimming. Short control commands switch on/off.
**The pushbuttons can be either taught-in as direction pushbuttons or universal pushbuttons: As direction pushbutton** 'switch on and dim up' is on one side and 'switch off and dim down' on the other side. A double-click on the switch on side triggers the automatic dimming up to full brightness with dim speed time. A double-click on the switch off side triggers the snooze function. The children's room function is triggered on the switch on side. **As a universal pushbutton** the direction change is made by briefly releasing the pushbutton.
**Central pushbutton 'on'** switches on with memory value. **Central pushbutton 'off'** switches off.
**Switching operation for children's rooms** (universal pushbutton or direction pushbutton on the switch-on side): If the light is switched on by holding down the push-button, 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** (universal pushbutton or direction pushbutton on the switch-off side): With a double impulse the lighting is dimmed down from the current dim-

ming 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.
**Light scenes on the PC** are set and retrieved using the Wireless Visualisation and Control Software GFVS. One or several FLD61 devices must be taught in on the PC as dimming switches with percentage brightness values.
**Lights scenes with wireless pushbuttons** are taught in on the FLD61 device. Up to four brightness values which can be taught-in in light scene pushbuttons with double rocker.
Either an FBH or an FAH can be taught in.
If a **wireless motion-brightness sensor FBH** is taught in, the switching threshold at which the lighting with memory value switches on (from approx. 30 lux in the position 'min' to approx. 300 lux in the position '3') depending on the brightness (in addition to the motion) is determined with the lower rotary switch during teach-in. If the FBH is taught in in position 'max', it is only evaluated as a motion sensor. A dropout delay of 1 minute is fixed in the FBH.
If a **wireless brightness sensor FAH** is taught in, the threshold at which the lighting switches on or off (from approx. 0 lux in the position 'min' to approx. 50lux in the position 'max') depending on the brightness is determined with the lower rotary switch. If brightness threshold is falling below it will be switched to memory value. Switching off takes place at a brightness of > 200lux.
**The LED** performs during the teach-in process according to the operation manual. It shows control commands by short flickering during operation.

## Typical connections
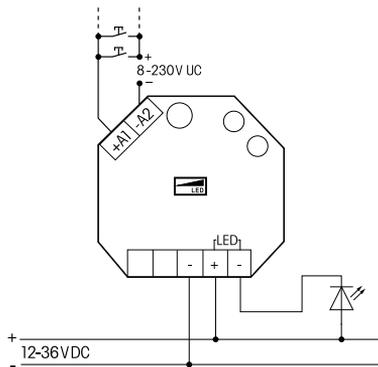


## Teaching-in actuator FLD61

The teach-in memory is empty on delivery from the factory. If you are unsure whether the teach-in memory contains something or not, **you must first clear the memory contents completely:**

Set the upper rotary switch to CLR. The LED flashes at a high rate. Within the next 10 seconds, turn the lower rotary switch three times to the right stop (turn clockwise) and then turn back away from the stop. The LED stops flashing and goes out after 2 seconds. All taught-in sensors are cleared, the repeater and the confirmation telegram are switched-off.

**Clear individual taught-in sensors** in the same way as in the teach-in procedure, except that you set the upper rotary switch to CLR instead of LRN, and operate the sensor. The LED previously flashing at a high rate goes out.

## Teaching-in sensors

1. Setting of the lower rotary switch to the desired teaching-in function: The flashing of the LED as soon as a new setting range has been reached when turning the rotary switch helps to find the desired position reliably.

   **left stop min** = Teach in direct light scene pushbuttons, a complete pushbutton with double rocker is assigned automatically; **Teach in a computer using the Wireless Visualisation and Control Software GFVS:** The percentage brightness can be set there between 0 and 100 per cent and saved. Several dimmer switches can be linked to form a light scene.

   **position 1** = 'teach-in 'central off';
   **position 2** = Teach-in universal pushbutton 'dim' and 'on/off';
   Universal pushbuttons must be taught-in identically at top and bottom if the pushbutton is to have the same function at top and bottom;
   **position 3** = teach-in 'central on';
   **right stop max** = direction pushbuttons;
   Direction pushbuttons are fully taught-in automatically when pressed. Where you press defines the switch-on and dim-up functions; the opposite side is then for switch-off and dim-down.

2. Set the upper rotary switch to LRN. The LED flashes at a low rate.

3. Operate the sensor which should be taught-in. The LED goes out.

To teach-in further sensors, turn the upper rotary switch briefly away from position LRN. Continue the procedure from pos 1.

After teach-in, set the rotary switches of the actuators to the required function.

## Saving light scenes

Up to four brightness values retrievable with a direct light scene pushbutton can be saved.

1. Adjust the required brightness level with a previously taught-in universal or direction pushbutton.

2. Within 60 seconds, this brightness value will be stored by pressing a button 3-5 seconds on one of the four ends of the rocker of the previously taught-in direct light scene pushbutton.

3. Repeat from point 1 to save further directly retrievable light scenes.

## Recalling light scenes:

Press one rocker of the scene pushbutton briefly to recall the scene you require.

## Switching the repeater on and off:

The repeater is switched on or off if the control voltage is applied to the local control input when connecting the supply voltage. The LED lights up for 2 seconds as a status signal when applying the supply voltage = repeater off (as-delivered state) or 5 seconds = repeater on.

## Switch-on confirmation telegrams:

For deliveries ex-works the confirmation telegrams are switched-off. Set the upper rotary switch to CLR. The LED flashes nervously. Now within 10 seconds turn the bottom rotary switch 3 times to the left (anticlockwise) and then back away. The LED stops flashing and goes out after 2 seconds. The confirmation telegrams are switched-on.

## Switch-off confirmation telegrams:

Set the upper rotary switch to CLR. The LED flashes nervously. Now within 10 seconds turn the bottom rotary switch 3 times tot he left (anticlockwise) and then back away. The LED goes out immediately. The confirmation telegrams are switched-off.

## Teaching-in feedback of this actuator in other actuators or FSV software

For switching ON and OFF and simultaneously transmitting of feedback the local control input has to be applied.

## Teaching-in feedback of other actuators in this actuator: 'Switch on' will be taught-in in position 'central ON'. 'Switch off' will be taught-in in position 'central OFF'. After teach-in the function and the desired minimum brightness or dimming speed will be set.

When an actuator is ready for teach-in (the LED flashes at a low rate), the very next incoming signal is taught-in. Therefore, make absolutely sure that you do not activate any other sensors during the teach-in phase.