

Wireless actuator


 Constant current LED dimmer  
 switch FKLD61

**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 &lt;75%.

**valid for devices from production week 11/14** (see bottom side of housing)

DC constant current source for LEDs up to 1000 mA or 30 watts. Only 0.3 watt standby 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. Encrypted wireless, bidirectional wireless and repeater function are switchable.

For installation.

45 mm long, 55 mm wide, 33 mm deep.

The nominal output current can be set with a jumper on the circuit board:

no connection: 350 mA;  
 flush right (Pin 2-3 connected):

700 mA;

flush left (Pin 1-2 connected):

1000 mA.

Factory settings 700 mA.

The input voltage ranges from 12 V DC to 36 V DC maximum.

The input voltage must be selected to the sum of the LED at the output voltage, so that the current control can operate. This deviation must be at least 6 volts.

The total power output current x output voltage should not exceed 30 watts.

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).

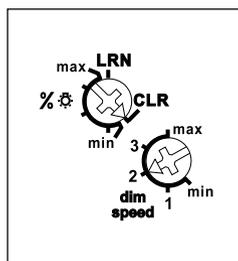
In case of a power failure the switch position and the brightness stage are stored and may be switched on when the power supply is restored.

Automatic electronic overload protection and overtemperature switch-off.

**Starting in production week 11/14, you can teach in encrypted sensors.**

**Bidirectional wireless** and/or a **repeater** function can be switched on.

### Function rotary switches



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.

The minimum brightness (fully dimmed) is adjustable **with the upper % rotary switch**. In the setting LRN up to 35 pushbuttons 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 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** (universal pushbutton or direction pushbutton on the switch-off side): 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.

**Light scenes on the PC** are set and retrieved using the Wireless Visualisation and Control Software GFVS. A description of the GFVS is at 'elfako-wireless.com'. One or several FKLD61 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 FKLD61 device. Up to four brightness values which can be taught-in in light scene pushbuttons with double rocker.

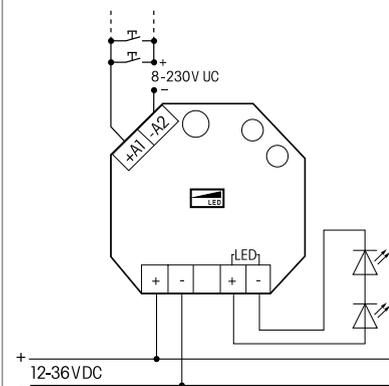
Either an FBH or an FAH can be taught in. If a **wireless motion-brightness sensor FBH** is taught in, the switching threshold at which the lighting with memory value switches on (from approx. 30 lux in the position 'min' to approx. 300 lux in the

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. 50 lux 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 > 200 lux.

**The LED** performs during the teach-in process according to the operation manual. It shows control commands by short flickering during operation.

### Typical connections



### Technical data

Voltage	12-36V DC
Current	350, 700, 1000 mA
Power	max. 30W
Max./min. temperature at mounting location	+50°C/-20°C
Standby loss (activ power)	0.3W

## Teaching-in wireless sensors in wireless actuators

**All sensors must be taught-in in the actuators so that they can detect and execute commands.**

### Teaching-in actuator FKLD61

The teach-in memory is empty on delivery from the factory. To ensure that a device was not previously taught-in, **clear the memory completely:**

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

### **Clear single taught-in sensors:**

Turn the upper rotary switch to CLR. The LED flashes at a high rate. Operate the sensor. The LED goes out.

If all the functions of an encrypted sensor are cleared, teach-in must be repeated as described under *Teach-in encrypted sensors*.

### **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 PC 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 push-buttons;

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.

### **To prevent unintentional teach-in, teach in pushbuttons by "double-clicking" (pressing rapidly twice in succession).**

Within 2 seconds, turn the upper rotary switch three times to right stop LRN (turn clockwise). The LED flashes 'double'. 'Double-click' the pushbutton you want to teach in. The LED goes out.

To change back to teach-in with a 'single click', turn the upper rotary switch 3 times to right stop LRN (clockwise) within 2 seconds. The LED flashes at a low rate. After a power supply failure, the device reverts automatically to teach-in with a 'single click'.

You can teach in unencrypted and encrypted sensors.

### **Teach in encrypted sensors:**

1. Turn the upper rotary switch to LRN.
2. Turn the lower rotary switch three times to left stop (anticlockwise). The LED flashes very rapidly.
3. Within 120 seconds, enable sensor encryption. The LED goes out.

Caution: Do not switch off the power supply.

4. Then teach in the encrypted sensor as described in Teach in sensors.

To teach in other encrypted sensors, turn the upper rotary switch briefly away from position LRN and then turn it to 1.

With encrypted sensors, use the 'rolling code', i.e. the code changes in each telegram, both in the transmitter and in the receiver.

If a sensor sends more than 50 telegrams when the actuator is not enabled, the sensor is no longer recognised by the enabled actuator and you must repeat teach-in as 'encrypted sensor'. It is not necessary to repeat the function teach-in.

### **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 to the 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 GFSV 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.

**ELTAKO GmbH hereby declares that the products that relates to this operating manual, are in compliance with the essential requirements and other relevant provisions of directive 1999/5/EC. A copy of the EU declaration of conformity can be requested at the address below.**

**Must be kept for later use!**

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