



Wireless actuator  
Universal dimmer switch  
FUD70K

**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%.

Universal dimmer switch, power MOSFET up to 400W. Automatic lamp detection. Only 0.6 watt standby loss. Minimum brightness and dimming speed are adjustable. With children's room, sleep time and light alarm circuit. In addition with light scene control and new FIH63B constant light control. Bidirectional wireless and repeater function switchable. Mounting in the 230V power supply cord, e.g. in false ceilings. 100mm long, 50mm wide and 31mm deep.

Universal dimmer switch for R-, L-, and C-loads up to 400W, depending on ventilation conditions. Dimmable energy saving lamps ESL and dimmable 230V LED lamps, additionally depending on the lamps electronics.

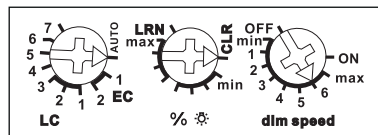
**Zero passage switching with soft ON and soft OFF to protect lamps.**  
Switching voltage 230V.  
No minimum load required.

**This dimmer switch is controlled by wireless buttons, the wireless hand-held transmitter and the remote controls FF8, FFD and UFB.**

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.

### Function rotary switches



**The left rotary switch** on the side is required first for teach-in. In operation, the release delay is set by FBH or the staircase light pushbutton in minutes.

**The middle rotary switch** on the side is required first for teach-in. It is used to set the minimum brightness in operation.

**The right rotary switch** defines the dimming speed and has the settings ON = Permanent ON with maximum brightness and OFF = Permanent OFF.

**The wireless pushbuttons can be taught-in either as direction pushbuttons, universal pushbuttons or staircase light pushbuttons:**

**When installed as a direction switch**, one side is then 'switch on and dim up' and the other side is 'switch off and dim down'. A double-click on the switch-on side activates automatic dim-up to full brightness at dim speed. A double click on the switch-off side activates the snooze function. The children's room function is implemented on the switch-on side.

**As a universal switch**, change the direction by briefly releasing the pushbutton. With switching operation for children's rooms and snooze function.

**Wireless pushbutton Central ON:**  
Any impulse length, switches on with memory value.

**Wireless pushbutton Central OFF:**  
Any impulse length, switches off.

**Switching for light alarm clocks:** A wireless signal of a time clock which was taught-in accordingly starts the wakeup function by switching on the light at the lowest brightness level and dims up slowly until the maximum level is reached within 30 minutes up to maximum brightness. Tip briefly (e.g. hand-held wireless transmitter) to stop dim-up.

**Switching operation for children's rooms** (universal switch or direction switch 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. The last saved brightness level is not modified.

**Snooze function** (universal switch or direction switch 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. = 30 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 "eltako-wireless.com" in chapter V. One or several FUD70K devices must be taught in on the PC as dimming switches with percentage brightness values.

#### Staircase light pushbutton:

The light is switched on by a staircase light pushbutton at memory value and the set RV time is started. At the end of the set RV time, the light is switched off. Press again to switch back on.

#### FTK as NO contact:

When a window is opened, the light switches on at memory value. When the window is closed, the light switches off.

#### FTK as NC contact:

When the window is opened, the light switches off. When a window is closed, the light switches on at memory value.

#### FAH as twilight pushbutton:

When an FAH wireless brightness sensor is taught in, the switching threshold is defined by the right rotary switch during teach-in. This switching threshold determines the value at which the light is switched on or off depending on the brightness (from approx. 0 lux in OFF position to approx. 50 lux in ON position). If the brightness threshold is undershot, the light is switched on at memory value. The light is switched off at a brightness of > 200 lux.

#### FAH as twilight dimmer:

When an FAH wireless brightness sensor is taught-in, the smallest dimming value is defined in % by the right rotary switch during teach-in. This dimming value determines the value to which the light is dimmed down in darkness (OFF = lowest dimming value up to ON = highest dimming value). If the brightness undershoots a fixed limit, the light is switched on at maximum dimming value. If the brightness drops, the dimming value is also reduced. If the brightness increases again, the dimming value is also increased. If the brightness exceeds the fixed limit, the light is switched off.

#### FBH as master:

When an FBH wireless motion detector and brightness sensor is taught in, a threshold value is defined by the right rotary switch during teach-in. This threshold value determines the value at which the light is switched on at memory value depending on the brightness (in addition to motion) (from approx. 30 lux in OFF position to approx. 300 lux in MAX position). If the FBH is taught-in in ON position, it is only evaluated as a motion detector. If no motion is detected, the FUD70K switches off after the set RV time.

The FBH is deactivated by switching off or by pressing the pushbutton to dim. The device is also deactivated when the central pushbutton, scene pushbutton and 'dimming values' are changed by PC. The FBH is reactivated by briefly tipping the pushbutton on the switch-on side of the direction pushbutton.

#### FBH as slave:

The FBH is only evaluated as motion detector.

#### Constant light control with FIH63B:

Switching on the light by pushbutton. The required brightness is set by pushbutton. The first brightness value of the FIH63B then received becomes the target brightness. It is automatically kept constant by the FUD70K by incoming brightness values from the FIH63B. After every change in brightness (dimming) by pushbutton, the next received brightness value from the FIH63B becomes the new target brightness. Switch off the light

by pushbutton or if the target brightness is exceeded.

When the target brightness is saved with 'direction pushbutton for target brightness', a change in brightness by pushbutton is then overridden by the saved target brightness

If an FBH is taught in as slave in addition to the FIH63B, the light is switched on when motion is detected and the target brightness is undershot. If no motion is detected or the target brightness is exceeded after the set RV time, the light is switched off.

Switching off by pushbutton deactivates the automatic control by FBH or FIH.

The device is also deactivated when the central pushbutton, scene pushbutton or 'dimming values' are changed by PC. Automatic control is reactivated by briefly tipping the pushbutton on the switch-on side of the direction pushbutton.

#### Save target brightness:

Press the top of the 'direction pushbutton for target brightness'. The current brightness sent by the FIH63B is saved.

#### Cancel target brightness:

Press the bottom of the 'direction pushbutton for target brightness'.

**The red LED** on the side under the left rotary switch accompanies the teach-in process and indicates control commands in operation by lighting up briefly.

#### Teaching-in actuator FUD70K-230V



Before starting the teach-in process, connect the device and plug in the power supply unit.

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 middle rotary switch to CLR. The LED flashes at a high rate. Within the next 10 seconds, turn the left 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 and the acknowledgement telegrams are deactivated.

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

#### Teaching-in sensors

A total of 120 memory locations is available.

1. Turn the left rotary switch to the required teach-in function:

1 = Teach in timer as wake-up light.

Teach in FIH63B or FBH as master;

2 = 'Central OFF';

Teach in second FBH as slave;

3 = universal pushbutton;

Teach in third FBH as slave;

4 = 'Central ON';

Teach in fourth FBH as slave;

5 = Teach in direction pushbutton; direction pushbutton is taught in completely and automatically when pressed.

Depending on where the pushbutton is pressed, the functions for switch-on and dim-up are defined on one side and switch-off and dim-down on the other side;

Teach in FTK and Hoppe window handle as NO contact;

6 = Teach in sequential light scene pushbutton; a pushbutton or half of a double pushbutton is assigned automatically.

Teach in FTK and Hoppe window handle as NC contact;

7 = Teach in direct 4-way light scene pushbutton; a complete pushbutton with double rocker is assigned automatically;

8 = Teach in light scene button Teach in FAH as twilight pushbutton;

9 = Teach in staircase light pushbutton Teach in FAH as twilight dimmer;

10 = Teach in 'direction pushbutton for target brightness';

Teach in PC with GFVS software;

2. Turn the middle rotary switch to LRN. The LED flashes at a low rate.

3. Press the sensor to be taught-in. The LED goes out.

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

#### Save light scenes:

Up to four brightness values can be saved by a direct light scene button.

1. Set the required brightness value using a previously taught-in universal button or direction button.

2. Within 60 seconds, for longer than 3 seconds but shorter than 10 seconds press on one of the four rocker ends of the previously taught-in direct light scene button to save the brightness value. The lamp lights up briefly as acknowledgement.

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

Retrieve the light scene you require by pressing a button briefly.

#### Retrieving light scenes

Up to four brightness values are retrievable using a direct light scene pushbutton (pushbutton with double rocker, top left = light scene 1, top right = light scene 2, bottom left = light scene 3 and bottom right = light scene 4) and/ or using a sequential light scene pushbutton (pushbutton or one half of a double pushbutton, press top = next light scene, press bottom = previous light scene).

**The green LED** under the middle rotary switch flashes briefly when an acknowledgement telegram is sent.

#### Enable acknowledgement telegrams:

The confirmation telegrams are disabled when the device leaves the factory. Set the middle rotary switch to CLR. The red LED flashes very rapidly. Then within 10 seconds, turn the left rotary switch 3 times to left stop (turn anticlockwise) and back again. The red LED goes out and the green LED lights up for 2 seconds.

#### Disable acknowledgement telegrams:

Set the middle rotary switch to CLR. The red LED flashes very rapidly. Then within 10 seconds, turn the left rotary switch 3 times to left stop (turn anticlockwise) and back again. The red LED goes out.

#### Switch on repeater:

Turn the middle rotary switch to CLR and the right rotary switch to ON.

Then switch on the supply voltage.

#### Switch off repeater:

Turn the middle rotary switch to CLR and the right rotary switch to OFF.

Then switch on the supply voltage.

#### Technical data

Incandescent and halogen lamps <sup>1)</sup>	up to 400 W 230V (R)
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Inductive transformers (L)	up to 400 W <sup>2) 3)</sup>
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Electronic transformers (C)	up to 400 W <sup>2) 3)</sup>
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Dimmable energy saving lamps ESL	up to 400 W <sup>5)</sup>
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Dimmable LEDs	up to 400 W <sup>5)</sup>
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Max./min. temperature at mounting location	+50°C/-20°C <sup>4)</sup>
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Standby loss (activ power)	0.6 W
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<sup>1)</sup> For lamps with a maximum of 150 W.

<sup>2)</sup> 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!

<sup>3)</sup> **When calculating the load 20% loss has to be considered for inductive (wound) transformers and 5% loss in addition to the lamp load.**

<sup>4)</sup> Affects the maximum switching power.

<sup>5)</sup> 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 positions +ESL, -ESL, LED1, LED2 and LED3 optimize the dimming range, which, however, only gives a maximum power up to 100W. No inductive (wound) transformers may be dimmed in these comfort positions.



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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