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Eltako ELECTRONICS

Wireless actuator CE

Universal dimmer switch FUD70-230V

valid for devices from production week 24/12
(see bottom side of housing)

Universal dimmer switch, power MOSFET up to 400W, ESL up to 100W and LED up to 100W. With adjustable minimum brightness or maximum brightness and dimming speed. With switching operation for light alarm clocks, children's rooms and snooze function. Also with light scene control by PC or wireless pushbuttons. Bidirectional wireless and with repeater function. Only 0.6 watt standby loss.

Mounting in the 230V power supply cord, e.g. in false ceilings. 100mm long, 50mm wide and 25mm deep.

Starting in production week 24/2012 with **bidirectional wireless;** in addition, a **repeater** function can be switched in. Every change in state and incoming central command telegrams are confirmed by a wireless telegram. This wireless telegram can be taught-in in other actuators, in the FVS software and in FUA55 universal displays.

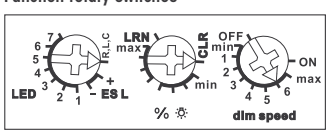
Universal dimmer switch for R, L and C loads up to 400 watts. Dimmable energy saving lamps ESL up to 100 watts and dimmable 230V LED lamps up to 100 watts.

Zero passage switching with soft ON and soft OFF to protect lamps.

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 first required for teach-in and in operation, it defines what load type the dimming curve should be set to:

Position R,L,C is the setting for all load types except for ESL and LED. In particular for 230V glow and halogen lamps. The load type, inductive or capacitive, is detected automatically.

The settings +ESL and -ESL consider the special conditions regarding dimmable energy saving lamps: The starting operation 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.

In position -ESL Memory is switched off. This can be of advantage for energy saving lamps because cold energy saving lamps require a higher minimum brightness as it will possibly be stored in Memory for warmer energy saving lamps.

The position LEDs 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.

The minimum brightness (fully dimmed down) or maximum brightness (fully dimmed up) is adjustable with the middle %☼ rotary switch. In the setting LRN up to 30 pushbuttons can be assigned, of which one or more central pushbuttons.

The dimming speed is adjustable **using the right dimming speed rotary switch on the side.** At the same time, the soft ON and soft OFF periods are changed.

The pushbuttons can be taught-in either as direction switches or universal switches:

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.

Switching for light alarm clocks: A wireless signal of a time clock which was taught-in accordingly starts the wake up function by switching on the light at the lowest brightness level and dims up slowly until the maximum level is reached. Dependent on the set dim speed the wake up time is between 30 and 60 minutes. The dimming process is stopped by tapping briefly, e.g. on the hand-held transmitter. At setting ESL the switching for light alarm clocks is not possible.

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. = 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 FVS. A description of the FVS is at "eltako-wireless.com". One or several FUD70 devices must be taught in on the PC as dimming switches with percentage brightness values.

Lights scenes with wireless switches are taught-in on the FUD. 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).

Either a FBH or FAH can be taught-in.

If a **wireless motion-brightness sensor FBH** is taught-in, the switching threshold will be set with the right rotary switch while teaching-in, in which, depending on the brightness (in addition to the movement), the lighting turns on with memory voltage (approximately 30 lux in the OFF position and up to 300 lux in the max position). If the FBH is taught-in in the ON position, it will only be evaluated as a motion detector. A delay of 1 minute is fixed in the FBH.

If a **wireless brightness sensor FAH** is taught-in, the switching threshold will be set with the right rotary switch while teaching-in, in which, depending on the brightness, the lighting turns on or off (approximately 0 lux in the OFF position and up to 50 lux in the ON position). When falling below the brightness threshold, it will be turned on with memory value. It will be turned off at a brightness > 200lux.

The LED on the side behind the left rotary switch performs during the teach-in process according to the operation manual. It shows wireless control commands by short flickering during operation.

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 FUD70-230V

⚠ 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.

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

1. Setting of the left rotary switch to the desired teaching-in function:
   R, L, C = timer as wake-up light;
   ESL+ = teach-in 'central off';
   ESL- = universal switch on/off and dim;
   Universal switches must be taught-in identically at top and bottom if the switch is to have the same function at top and bottom.
   1 = teach-in 'central on';
   2 = direction switch top means 'switch on and dim up', direction switch bottom means 'switch off and dim down';
   Direction switches are automatically taught-in completely by pressing top or down.
   3 = teach in sequential light scene push-button, a pushbutton or half of a double pushbutton is assigned automatically;
   4 = teach in direct light scene pushbutton, a complete pushbutton with double rocker is assigned automatically;
   5 = teach in a PC using the Wireless Visualisation and Control Software FVS. 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.
   6 = direction switch bottom means 'switch on and dim up', direction switch top means 'switch off and dim down';
   Direction switches are automatically taught-in completely by pressing top or bottom.
2. Set the middle 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 middle rotary switch briefly away from position LRN. Continue the procedure from pos 1.

Set the type of load with the left rotary switch after teaching-in. Set the minimum or maximum brightness with the middle rotary switch. Set the dimming speed with the right rotary switch.

Saving light scenes

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

1. Set the left rotary switch to the required operating mode R, L, C or ESL or LED.
2. Set the required brightness value using a previously taught-in universal switch or direction switch.
3. Press the pushbutton 3-5 seconds on one of the four rocker ends of the direct light scene pushbutton to save the brightness value.
4. To save other light scenes, repeat from point 2.

Retrieving light scenes

Up to four brightness values are retrievable using a **direct light scene pushbutton** (push-button 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).

Switching on/off repeater:
Set the middle rotary switch to LRN. Switch on supply voltage. The repeater is switched on or off. When the power supply is switched on, the LED lights up for 2 seconds = repeater off (as-delivered state) or 5 seconds = repeater on to indicate the state.

Teaching-in feedback of this actuator in other actuators or FVS software:
For turning on and off and simultaneously transmitting of feedback the right rotary switch 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 desired minimum brightness or maximum brightness 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.

Important note!

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

05/2012 Subject to change without notice.