

Wireless actuator



Light scene controller / Universal dimmer switch FLS70UD-230V

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%.

Power MOSFET up to 400W. Automatic lamp detection. Only 0.6 watt standby loss. Stores up to 40 light scenes for a group of dimmable energy saving lamps ESL, 230V LED lamps, incandescent lamps and halogen lamps. Also with light scene control by PC or wireless pushbuttons.

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

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

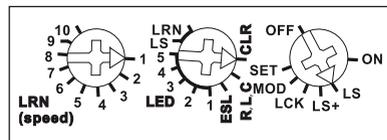
Zero passage switching with soft ON and soft OFF to protect lamps.

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 on the side



Function of FLS70UD-230V

All FLS in a room can be switched in series to obtain light scenes. The brightness of each lamp group is manually adjustable and the entire light scene can then be taught-in. Up to 40 light scenes are programmable. Up to 10 light scenes are retrievable sequentially with only one pushbutton. Up to 30 additional light scenes are directly retrievable with single assigned pushbuttons.

Each FLS or FLS groups can also be switched and dimmed individually. There are a total of 35 light scene and individual push buttons on each FLS. Retrieving a light scene overrides an individual setting.

The same function as a light scene pushbutton has an associated taught-in wireless transmitter module FSM12 or FSM61. Specific light scenes can then be retrieved with event-dependent or time-dependent control.

Position R, L, C (automatic mode) allows the dimming of all lamp types.

ESL is a comfort position for energy saving lamps which must be switched on with increased power dependent on the construction, so they will also switch on again safely in cold condition when dimmed down.

LED1 is a comfort position for LED lamps which are not being dimmed down enough when set to R, L, C (trailing phase angle) dependent on the construction and must therefore be forced to leading phase angle.

LED2 up to **LED5** are comfort positions for LED lamps like LED1, but with different dimming curves.

In positions ESL and LED1 up to LED5 no inductive (wound) transformers should be used. In addition, the maximum number of dimmable LED lamps can be lower than in the R, L, C position dependent on the construction.

Motion detection with taught-in wireless motion detector FBH. The light switches off automatically after 15 minutes provided no more motion is detected.

Light scenes on the PC are set and retrieved with the Wireless Building Visualisation and Control software GFVS.

For this purpose teach-in one or more FLS70UD as dimmer switches with percentage brightness value on the PC.

Lights scenes with wireless pushbuttons are taught-in on the FLS70UD. Either four sequentially retrievable brightness values (press up = next light scene, press down = previous light scene) and/or up to four brightness values taught-in into a light scene pushbutton with double rocker.

The LED on the side below the left rotary switch accompanies the teach-in process as described in the operation manual. It indicates control commands by short flickering during operation.

Technical data

Incandescent and halogen ¹⁾ lamps 230V (R)	up to 400W
Inductive transformers (L)	up to 400W ²⁾³⁾
Electronic transformers (C)	up to 400W ²⁾³⁾
Dimmable energy saving lamps ESL	up to 400W ⁵⁾
Dimmable 230V-LED's	up to 400W ⁵⁾
Max./min. temperature at mounting location	+50°C/-20°C ⁴⁾
Standby loss (activ power)	0,6W

¹⁾ For lamps with 150W max.

²⁾ 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. The dimmer might be destroyed. Therefore do not permit load breaking on the secondary part. Operation in parallel of inductive (wound) and capacitive (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⁾ Usually applies for dimmable energy saving lamps and dimmable 230V LED lamps. 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 and LED1 up to LED5 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.

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 FLS70

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.

Light scene teach-in is carried out after completion of the electrical installation.

Set the right rotary switch of all FLS70 to 'ON' or 'OFF' for function tests.

1. First a shared direction switch is taught-in for all FLS70's required to control the light scenes in a room. This is a FT4 wireless pushbutton rocker or a wireless FHS8 or FHS12 hand-held transmitter.
- 1a. **Teaching-in the "learn pushbutton"**
Here set the left learn ('LRN') rotary switch to position 5 and the middle rotary switch to 'LRN'. The LED on the FLS flashes at a low rate. Then briefly press the rocker at the top or bottom and the LED on the FLS goes out. From then on the required brightness stages can be adjusted for the light scenes using this "learn pushbutton".
- 1b. **Teaching-in the sequential light scene pushbutton**
Here set the left learn ('LRN') rotary switch to position 3 and the middle rotary switch to 'LRN'.

The LED on the FLS flashes at a low rate. Then briefly press the rocker at the top or bottom and the LED on the FLS goes out. Using this just taught-in sequential light scene pushbutton the sequential light scene can be retrieved later.

A double-click at the top will switch all the lamp groups to full brightness. The light scenes can then be called up again in ascending order (top switch) or descending order (bottom switch). Additional direct light scene retrieval functions cannot be assigned to the sequential light scene pushbutton.

1c. No teach-in position need be carried out for FBH and PC.

2. **Then set the right rotary switch to LOCK ('LCK') on all FLS70's.**

3. **Teaching-in the sequential retrievable light scenes**

3a. Turn the middle rotary switch to the required load type R,L,C, ESL or LED.

3b. Set the right rotary switch to 'MOD'.

3c. Set the left rotary switch to the required light scene position (1 to 10).

3d. Adjust the required brightness, using the "learn pushbutton" taught-in at the beginning.

Even if the lamp group in a light scene needs to be switched off, it must be taught-in now by switching off the "learn pushbutton" at the bottom.

3e. Turn the right rotary switch to 'SET', the LED on the FLS lights up and goes out after 2 seconds.

To store further light scenes continue with step 3b.

4. **Teaching-in the directly retrievable light scenes**

4a. Set the right rotary switch to 'LS+'.

4b. Use the left rotary switch to set the required dim speed.

1 = very slow to 10 = very fast

We advise you to select position 5 unless you have your own experiences.

4c. Turn the middle rotary switch to the required load type R,L,C, ESL or LED.

4d. Adjust the required brightness, using the "learn pushbutton" taught-in at the beginning.

Even if the lamp group in a light scene needs to be switched off, it must be taught-in now by switching off the "learn pushbutton" at the bottom.

4e. Set the middle rotary switch to 'LS', the LED flashes at a low rate.

4f. Operate the required light scene pushbutton and the LED on the FLS goes out.

To store further light scenes continue with step 4b.

Then, for normal operation, set the middle rotary switch for all devices of the light scene to the respective load R, L, C, ESL or LED and the left rotary switch to all the numbers of the taught-in light scenes.

The right rotary switch can be used to control the settings in automatic mode for each lamp group:

ON = light on with full brightness.

LS = light scenes are only retrievable and cannot be changed.

LS+= light scenes are retrievable and can only be changed temporarily using the "learn pushbutton".

OFF= light off.

If individual lamp groups can be influenced temporarily and manually, only an additional direction switch in each case need to be taught-in for one or more FLS70's as described in '1a'. In total up to 4 pushbuttons can be taught-in for each FLS70 without reducing the 40 storage places of the light scenes. Accordingly if fewer light scenes are taught-in, more pushbuttons are available.

Teach-in **central control functions** in the same way as light scenes. When teaching-in 'Central OFF' all lamp groups must be in position 'switched off'. 'Central ON' needs to be taught-in at a required brightness level.



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.

Must be kept for later use!

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