Eltako ELECTRONICS

RS485 bus universal dimming actuator FUD12NPN-12 V DC with light scene control

Universal dimming actuator 1 channel, power MOSFET up to 500 W, energy saving lamps ESL up to 100 W. Only 0.3 watt standby loss. With adjustable minimum brightness and dimming speed. With switching operation for light alarm clocks, children's rooms and snooze function.
Also for dimmable energy saving lamps.
Also with light scene control by PC or wireless pushbuttons.

Modular device for DIN-EN 60715 TH35 rail mounting. 1 module = 18 mm wide, 58 mm deep.

Universal dimmer switch for R, L and C loads up to 500 watts, depending on ventilation conditions. Dimmable energy saving lamps ESL up to 100 watts. Automatic detection of load R+L or R+C. ESL is manually settable.

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

Switching voltage 230 V.
No minimum load required.

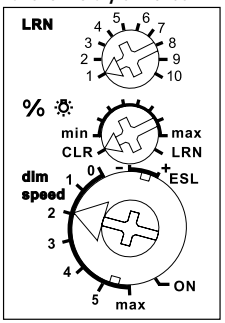
The brightness level is stored on switch-off (memory).

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.

Connection to the Eltako RS485 Bus, terminals RSA and RSB. Up to a total of 128 channels can be added in this way.

Function rotary switches



The minimum brightness (fully dimmed) is adjustable with the %☼ 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 **dimming speed rotary switch.** At the same time, the soft ON and soft OFF periods are changed.

The settings ESL consider the special conditions regarding dimmable energy saving lamps: The starting operation is optimized and the dimm speed changes logarithmically. 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 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. The contact of the timer must connect terminals +12 V and LW at least 0.2 seconds. At setting ESL is no switching for light alarm clocks 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.

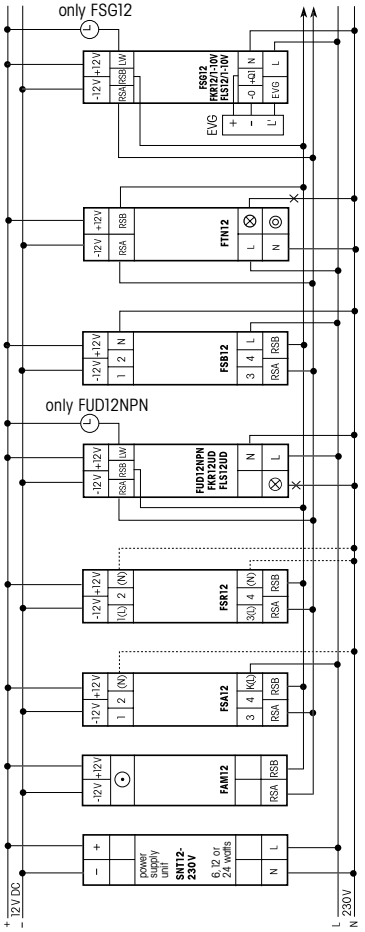
Snooze function (universal switch or direction switch on the switch-off side): With a double impulse the lighting is dimmed down from the current dimming position to the minimum brightness level and switched off. The current dimming position as well as the adjustable minimum brightness level determine 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 in Chapter V at "eltako-wireless.com". One or several FUD12NPN 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 FUD12NPN device. 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 a light scene pushbutton with double rocker.

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

Incandescent lamp and halogen lamp load [1] 230 V	up to 500 W [2]
Dimmable energy saving lamps ESL [3]	up to 100 W
Standby loss (active power)	0.3 W

[1] Applies to lamps of max. 150 W.

[2] Also max. 2 induction transformers of the same type (L load) and electronic transformers (C load).

[3] In the settings ESL no wound (inductive) transformer must be dimmed.

Teaching-in wireless sensors in wireless actuators

All sensors such as wireless pushbuttons, wireless hand-held transmitters, wireless transmitter modules, wireless window/door contacts, wireless timers and wireless motion/brightness sensors must be taught-in in the actuators (receivers with dimmers, switches and relays) so that they can detect and execute commands.

Teaching-in actuator FUD12NPN-12 V

⚠ Also the mains connection N/L is required for teach-in.

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 upper 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. Set the top rotary switch to the required teach-in function:

   1 = timer as wake-up light;

   2 = teach-in 'central off';

   3 = 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.

   4 = teach-in 'central on';

   5 = 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.

   6 = teach in sequential light scene push-button, a pushbutton or half of a double pushbutton is assigned automatically;

   7 = teach in direct light scene pushbutton, a complete pushbutton with double rocker is assigned automatically;

   8 = 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.

   9 = 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 to 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.

After teach-in, the dimming speed can be set with the bottom rotary switch, and on dimmable energy saving lamps ESL, with Memory (+) or without Memory (-). Set the minimum brightness using the middle rotary switch. When in operation, the top rotary switch LRN has no function.

Saving light scenes

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

Saving sequential light scenes on the device:

1. Set the upper rotary switch to position 10.
2. Set the middle rotary switch to min.
3. Set the lower rotary switch to 1, 2, 3 or 4.
4. Adjust the required brightness level with a previously taught-in universal pushbutton.
5. Turn the middle rotary switch to LRN. The LED lights up for 2 seconds.
6. Repeat from point 2 to save further sequentially retrievable light scenes.

Saving light scenes with a direct light scene pushbutton:

1. Adjust the required brightness level with a previously taught-in universal pushbutton.
2. Press the pushbutton for longer than 3 seconds on one of the four rocker ends of the light scene pushbutton with double rocker to save the brightness value.
3. Repeat from point 1 to save further directly retrievable light scenes.

⚠ 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 reminder!

This electrical equipment may only be installed by skilled electricians otherwise fire hazard or danger of electric shock exists!

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