

## RS485 bus switching actuator CE

## FSR12-12V DC

2-channel switching actuator ES/ER/EW impulse switch with integrated relay function, 1+1 NO contacts potential free 4A/250V AC, incandescent lamps 1000 watts, with DX technology. Only 0.1 watt standby loss.

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

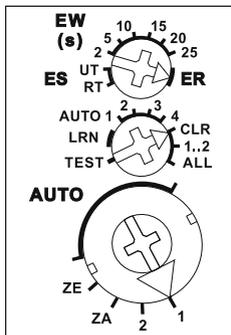
**Connection to the Eltako RS485 Bus, terminals RSA and RSB. Up to a total of 128 actuators can be added in this way.**

Up to 35 wireless pushbuttons each with 4 functions can be assigned to each channel of an FSR12 therefrom in the setting ES one or more central pushbuttons.

**Eltako Duplex technology allows you to switch normally potential free contacts in zero passage switching when 230V A/C voltage 50Hz is switched. This drastically reduces wear. To achieve this, simply connect the N conductor to the terminal (N) and L to 1(L) and/or 3(L). This results in an additional standby consumption of only 0.1 watt.**

The 12V DC supply voltage of the complete RS485 bus is mainly powered at 12W or 24W by a switch mode power supply unit FSNT12-12V that is only 1 or 2 pitch units wide. If both relays of the FSB12 are switched on, a power of 0.5 watts is required.

## Function rotary switches



The upper rotary switch defines the function of the 2 channels together as impulse switch with universal switch (ES-UT), as impulse switch with direction switch (ES-RT), as fleeting NO contact (EW) or as relay (ER). In ES function, central control commands ON/OFF can be taught-in. In EW function, a wiping time of 2 to 25 seconds can be set.

The middle and the lower rotary switches are for teaching-in the pushbuttons and if necessary the two channels will be tested. In normal mode, the two rotary switches are finally set to AUTO.

When **wireless motion detector and brightness sensors FBH** are taught-in, define the switching threshold separately for each channel using the top rotary switch. The switching threshold switches the lighting on or off depending on the brightness (also motion) (from approx. 30 lux in position RT to approx. 300 lux in position 25). If the FBH is taught-in in position ER, it is only evaluated as a motion detector. A off delay of 1 minutes is a fixed setting in the FBH.

When **wireless brightness sensors FAH** are taught-in, define the switching threshold separately for each channel using the top rotary switch. The switching threshold switches the lighting on or off depending on the brightness (from approx. 0 lux in position RT to approx. 50 lux in position 25). A hysteresis of approx. 300 lux is permanently set for switch on/off.

Only one FBH or FAH is taught-in per channel. However, one FBH or FAH can be taught-in in several channels.

In operation, FBH and FAH perform the switch on/off function in function position ES. In function position ER, FBH and FAH generate a switch-on wiping impulse of 0.2 seconds.

When **wireless window/door contacts FTK** are taught-in, different functions can be set with the middle rotary switch in position AUTO 1 to AUTO 4 and linked to maximum 32 FTKs: AUTO 1 = window closed then output active. AUTO 2 = window open then output active. In settings AUTO 3 and AUTO 4 the FTKs taught-in to a single channel are linked automatically. With AUTO 3 all FTKs must be closed so that the N/O contact closes (e.g. for climate control). With AUTO 4 one open FTK is sufficient to close the N/O contact (e.g. for an alarm signal or to switch on the power supply for an extractor hood).

One or several FTKs can be taught-in in several channels to allow several simultaneous functions in each FTK. After a power failure the link is restored by a new signal to the FTK and a signal on the next status message 15 minutes later.

The LED below the function rotary switch ES/EW/ER performs during the teach-in process according to the operation manual. It shows control commands by short flickering during operation.

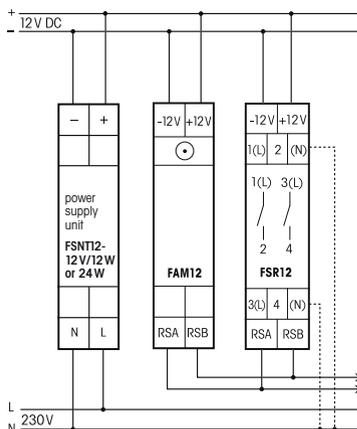
## Technical data

Rated switching capacity each contact	4 A/250V AC
Incandescent lamp and halogen lamp load <sup>1)</sup> 230V	1000 W
Fluorescent lamp load with KVG* 500 VA in lead-lag circuit or non compensated	500 VA
Fluorescent lamp load with KVG* 250 VA shunt-compensated or with EVG*	250 VA
Compact fluorescent lamps with EVG* 8x7 W	5x20 W
and energy saving lamps	5x20 W
Standby loss (active power)	0.1 W

<sup>1)</sup> Applies to lamps of max. 150 W.

\* EVG = electronic ballast units;  
KVG = conventional ballast units

## Typical connection



## Teaching-in wireless sensors in wireless actuators

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

## Teaching-in actuator FSR12-12V DC

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 ALL (or to CLR 1..2 if you only want to clear one channel) and also set the lower rotary switch to the required channel). 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 or sensors of a channel 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. Use the lower rotary switch, select the required channel 1 or 2 and the position ZE/ZA for the central control unit.
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. As central control unit pushbutton either a rocker or the right half of a double rocker can be taught-in. With other pushbuttons, teach-in the upper and lower buttons as required. When teaching-in direction switches the upper part (ON) and the bottom part (OFF) must be taught-in separately.

To teach-in further sensors, turn the middle rotary switch briefly away from position LRN. Continue the procedure from pos 1.

After teaching-in, set the middle and lower rotary switches to AUTO and turn the function rotary switch to the required position ES, EW 2 to ER 25 or ER. Taught-in central control unit switches are only active in position ES. For taught-in window/door contacts FTK, note that the middle rotary switch must be in the required setting AUTO 1 to 4.

**When the middle rotary switch is set to TEST**, the 2 contacts can be closed individually using the lower rotary switch:  
TEST + AUTO = all contacts open,  
TEST + 1 = contact 1 closed,  
TEST + 2 = contact 2 closed.



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!**