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Eltako ELECTRONICS

RS485 bus switching actuator CE 4-channel impulse switch FSR12-4x-12 V DC

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

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

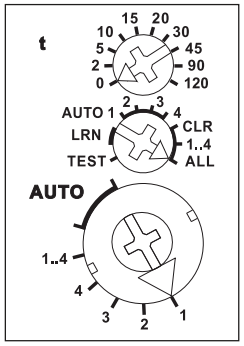
Connection to the Eltako RS485 Bus, terminals RSA and RSB. Up to a total of 128 actuators can be added in this way.

Up to 48 wireless pushbuttons each with 4 functions can be assigned to each channel therefrom one or more central pushbuttons.

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

The 12 V DC supply voltage of the complete RS485 bus is mainly powered at 6 W, 12 W or 24 W by a switch mode power supply unit SNT12-12 V DC that is only 1 or 2 pitch units wide. When all 4 relays of the FSR12 are switched on, a power of 0.7 watts is required. If a power failure occurs, the device is switched off in a defined sequence.

Function rotary switches



The channels can be taught-in as ES and/or ER channel separately from each other.

Scene control:
Several channels of one or several FSR12-4x-12 V DC devices can be switched on or off in a scene by one of the four signals of a push-button with double rocker taught-in as a scene button.

Central commands on PC are sent using the FVS Wireless Visualisation and Control Software. To do this, teach-in one or several FSR12-4x-12 V DC devices.

Use the rotary switches to teach-in the buttons and test the 4 channels as required. For normal mode, the middle and lower rotary switches are then set to AUTO. With the upper rotary switch the EW time (0-120 seconds) is directly set for relays or the RV time (0-120 minutes) for impulse switches for all channels if necessary.

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 0 to approx. 300 lux in position 90). If the FBH is taught-in in position 120, it is only evaluated as a motion detector. A off delay of 1 minutes is a fixed setting in the FBH. An additionally set RV time is not taken into account.

When **wireless brightness sensors FAH60** 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 0 to approx. 50 lux in position 120). A hysteresis of approx. 300 lux is permanently set for switch on/off. An additionally set RV time is not taken into account.

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

When **wireless window/door contacts FTK or Hoppe window handles** are taught-in, different functions can be set with the middle rotary switch in position AUTO 1 to AUTO 4 and linked to maximum 40 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. An additionally set RV time is not taken into account.

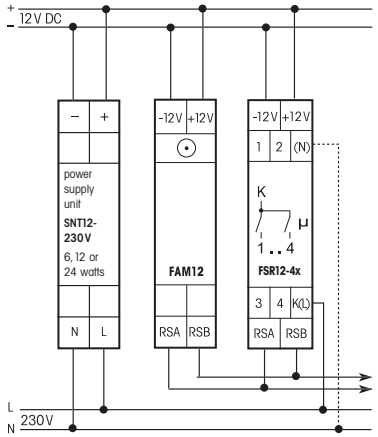
The LED below the upper function rotary switch performs during the teach-in process and shows control commands by short flickering during operation.

Technical data

Rated switching capacity each contact	4 A/250 V AC
Incandescent lamp and halogen lamp load [1] 230 V	1000 W
Fluorescent lamp load with KVG* in lead-lag circuit or non compensated	500 VA
Fluorescent lamp load with KVG* shunt-compensated or with EVG*	250 VA
Compact fluorescent lamps with EVG* and energy saving lamps	8 x 7 W 5 x 20 W
Standby loss (active power)	0.1 W

[1] 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 in the actuators so that they can detect and execute commands.

Teaching-in actuator FSR12-4x-12 V 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..4 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. Select the required Channel 1 to 4 or 1..4 using the lower rotary switch.
2. Use the upper rotary switch to select the required teach-in function.
   0 = teach in 'direction button ON';
   2 = teach in 'direction button OFF';
   5 = teach in 'universal button ES';
   10 = teach in 'universal button ER';
   15 = teach in 'central control button ON';
   20 = teach in 'central control button OFF';
   Central buttons have priority as long as they are pressed.
   30 = teach in 'scene button';
   Scene buttons (double rocker) are taught-in in fully automatic mode.
3. Set the middle rotary switch to LRN. The LED flashes at a low rate1.
4. Press the sensor to be taught-in. The LED goes out.

The position of the upper rotary switch is unimportant for FTK and PC during the teach-in process.

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

A pushbutton (rocker end) can only execute the same last taught-in function of different channels of a FSR12-4x-12 V DC. Different pushbuttons can execute different functions of one or more channels of a FSR12-4x-12 V DC.

Teach in scenes:
Four scenes can be saved by a scene button previously taught-in.

1. Switch on/off impulse switch
2. The switch state is saved when you press one of the four rocker ends of the doubler-ocker scene button for longer than 3 seconds but shorter than 10 seconds.

Recall scenes:
Press briefly to recall the scene you require.

An additionally set RV time is not taken into account.

After teaching-in, set the middle and lower rotary switches to AUTO and turn the upper function rotary switch to the required time. 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 4 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,
TEST + 3 = contact 3 closed,
TEST + 4 = contact 4 closed,
TEST + 1..4 = all contacts 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!

09/2011 Subject to change without notice.