

RS485 bus switching actuator

Multifunction sensor relay

FMSR12-12V DC

Multifunction sensor relay for brightness, twilight, wind, rain and frost, 5 OptoMOS semiconductor outputs 50mA/8...230V UC. Only 0.2 watt standby loss.

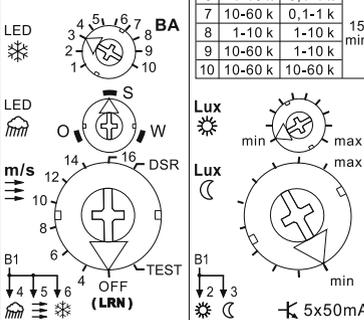
Modular device for DIN-EN 60715 TH35 rail mounting.
2 modules = 36mm wide, 58mm deep.
Connection to the Eltako RS485 Bus, terminals RSA and RSB. Up to a total of 128 actuators can be added in this way.

The multifunction sensor relay FMSR12 evaluates the telegrams of the wireless weather data transmitter module FWS61 and sends control commands to the downstream actuators EGS1Z2 or EGS12Z2 depending on the setting of the rotary switches on the front panel.

The OptoMOS semiconductor outputs switch the voltage present on the universal voltage input terminal +B1. The 12V DC supply voltage of the complete RS485 bus is mainly powered at 6W, 12W or 24W by a switch mode power supply unit SNT12-12V DC that is only 1 or 2 pitch units wide.

Function rotary switches

BA	 Lux	 Lux	RV
1	1-10 k	0,1-1 k	5 min
2	10-60 k	0,1-1 k	
3	1-10 k	1-10 k	
4	10-60 k	1-10 k	
5	10-60 k	10-60 k	15 min
6	1-10 k	0,1-1 k	
7	10-60 k	0,1-1 k	
8	1-10 k	1-10 k	
9	10-60 k	1-10 k	
10	10-60 k	10-60 k	



LED  BA

LED  Lux

m/s  DSR

B1  4 OFF (LRN) 6 TEST

 Lux  Lux

 min max

 min max

 5x50mA

BA = Setting the operating modes 1 to 10 from the table. 2 delay times RD - for wind and twilight - each in connection with 5 brightness ranges for light and twilight. The LED behind the rotary switch indicates frost at an outdoor temperature below 2°C, at this point output 6 is closed. This output opens again as soon as the temperature is above 3°C for 5 minutes.

O-S-W = If the multi sensor MS is aligned towards the south, the weighting for light and twilight can be shifted towards the east or west. If the MS is mounted in a different direction, the desired point of the compass can be set using this rotary switch. A LED behind the rotary switch indicates **rain detection**, at this point output 4 is closed. Once the rain sensor surface dries out - assisted by a heating unit - contact 4 opens immediately. This is automatically followed by a 2-second pulse on output 2 if the sun signal is present at that moment.

m/s = This rotary switch is used to select the wind speed in metres per second at which the **wind signal** is triggered. This closes output 5. This is indicated by the LED behind the rotary switch. Opening takes place after the delay time RD which has been set, during which the LED flashes. This is automatically followed by a 2-second pulse on output 2 if the sun signal is present at that moment.

DSR = In this position of the wind rotary switch the FMSR12 operates like a twilight sensor relay. The twilight signal as described under **Lux ** is then continuously present at output 3 as long as the set twilight value is undershot. Output 3 opens with a delay of 5 minutes if the set twilight value is exceeded. The outputs 4 (rain) and 6 (frost) remains active as described there. Output 5 (wind) likewise remains active, but the wind signal is triggered at 10 m/s.

TEST = As long as 'TEST' remains switched on, each switchover from the 'OFF' position to the 'TEST' position activates the outputs 2 to 6 in ascending order.

OFF = In the 'OFF' position the FMSR12 is ready for teach-in.

Lux  = This rotary switch is used to set the brightness at which the **sun signal** is triggered as a 2-second pulse on output 2 after 20 seconds. The LED behind the rotary switch indicates when the brightness value is exceeded.

Lux  = This rotary switch is used for setting the brightness at which the 2-second **twilight signal** is triggered at output 3 after the set delay time RD when the value is undershot. This is indicated by the LED behind the rotary switch. It flashes during the delay time. If the twilight switching threshold is set to the same level or higher than the sun switching threshold,

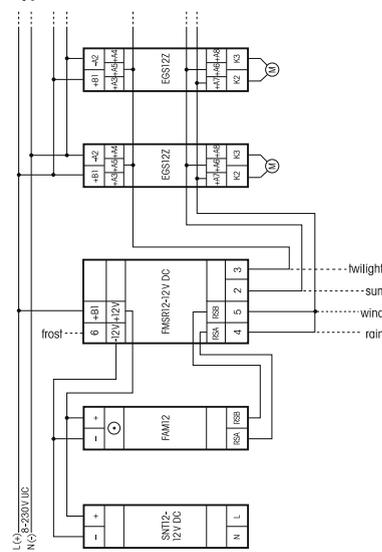
then the sun switching threshold is raised internally above the twilight switching threshold.

Light change compensation: If there was a continuous change from sun to rain clouds, the result would be a nervous opening and closing of shading elements. This is prevented by using light change compensation.

Telegram monitoring: The weather data transmitter module FWS61 sends a status telegram at least every 10 minutes. If the telegram is not sent twice in a row, an alarm is tripped: The wind output 5 is closed for 2 second in order to protect any awnings or windows which may be connected here. This pulse is repeated every hour. Three LEDs flash at a fast rate if telegram transmission is interrupted. When a telegram is again received, the alarm stops automatically.

After a power failure, 3 LEDs flash at a low rate until a telegram is received.

Typical connection



Teaching-in wireless sensors in wireless actuators

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

Teaching-in FWS61-24 V DC into actuator FMSR12-12V DC

1. Set bottom left rotary switch to OFF.
2. Turn bottom right rotary switch three times to right stop (turn clockwise) and then turn back each time. The LEDs Sun and Twilight light up alternately.
3. Switch on the power supply of FWS61-24 V DC. The LEDs go out.

Only one FWS61 can be taught-in at a time.



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.