

Multifunction Sensor Relay
MSR12-UC



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%.

Multifunction sensor relay for brightness, twilight, wind, rain and frost, 5 OptoMOS semiconductor outputs 50 mA/8..230V UC. Standby loss without multisensor MS only 0,5 watts. DIN rail mounted device for mounting to DIN-EN 60715 TH35. 2 modules = 36mm wide, 58mm deep. The Multifunction Sensor Relay MSR12 evaluates the signals from the Multi Sensor MS once per second, and sends appropriate control signals to the downstream EGS12Z or EGS12Z2 actuators depending on the setting of the rotary switch on the front. The OptoMOS semiconductor outputs switch the voltage present on the universal voltage input terminal +B1. One multisensor MS can only be connected to a multifunction sensor relay MSR12.

However several MSR12 can be connected to a Multi Sensor MS, e.g. for evaluating up to three directions with the light-sensor of the MS.

Only one single MSR12 must provide the outer terminal resistance. It must be removed for any further MSR12.

Supply voltage 24V DC from the power unit SNT12-230V/24V DC. This power unit simultaneously supplies the Multi Sensor MS connected to the terminals MS1, MS2, MSA and MSB, including heating of the rain sensor surface.

After installation wait for the short automatic synchronisation of approx. 1 minute. During this process three LEDs flash in a slow sequence.

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	

BA = Setting of the operation modes 1 to 10 from the adjacent chart. 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 MSR12 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 MSR12 has no function.

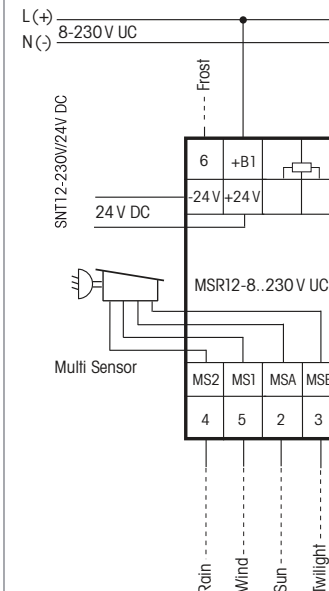
Lux ☀ = This rotary switch is used to set the brightness at which the **Sun signal** is immediately triggered as a 2-second pulse on output 2. The LED behind the rotary switch indicates when the brightness value is exceeded.

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.

Sensor function and open circuit monitoring

The Multi Sensor MS sends updated information to the MSR12 every second. If this signal is missing completely for 5 seconds, or if the individual signal from the wind sensor is missing for 24 hours, then an alarm is triggered: 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. The wind LED flashes rapidly to signal wind alarm. 3 LEDs flash rapidly at total signal failure. The alarm is turned off automatically when a signal is detected again.

Typical connection



Technical Data

OptoMOS	50 mA/8..230V UC
Max./Min. temperature at mounting location	+50°C/-20°C
Standby loss (active power)	0,5 W

Must be kept for later use!

We recommend the housing for operating instructions GBA12.

Eltako GmbH

D-70736 Fellbach

+49 711 94350000

www.eltako.com