



Sensor-driven motor controller (wind/light)

SMS 2 (rail mounting version)

SMS U2 (flush mounting version)

Wind sensor SW 4 / light sensor SL 2

Compact, easily installed awning controller with integrated wind and light sensing. Automatic shading control and protection against awning damage from high wind speed.

Special features

- ▶ Comfort and security control
- ▶ Integrated sensor power source (PELV); no external power supply necessary
- ▶ Can also be used as a group controller for lower-level roller shutter or louver blind controllers
- ▶ Low power consumption
- ▶ SMS 2 features:
 - Additional automatic twilight function
 - Floating relay contacts
 - Automatic reverse function (louvre blinds)



General information

The SMS 2 or SMS U2 are used together with the SW 4 wind sensor and the SL 2 light sensor for safe and convenient control of awnings or external blinds.

When the sun intensity is high, the awning is extended automatically, and retracted again when the brightness decreases (this automatic function can also be deactivated). If the wind speed is too high, the awning is retracted automatically.

The SMS 2 also has an integrated twilight function and a blind reverse function.

Buttons for direct OPEN/CLOSE operation can be connected. The automatic shading system can be deactivated for a certain period of time by pressing an operating button for a longer period of time.

Wind monitoring always has priority, so system safety is guaranteed even in the event of incorrect operation.

Applications

Convenient automatic shading control with additional protection against wind damage to electrically operated awnings.

SMS 2 has an additional automatic twilight function for night-time room darkening.

Operation

The desired response thresholds are set with the „Sun“ and „Wind“ (and „Twilight“ at SMS 2) settings.

When a set limit value is exceeded, the control LED starts flashing and the awning is activated after the response time has elapsed. The details of the individual operating modes can be found in the function diagrams.

The awning can also be operated manually by a directly connected dual push-button (without mutual interlock). The response time of the automatic shading function is reset after each manual operation.

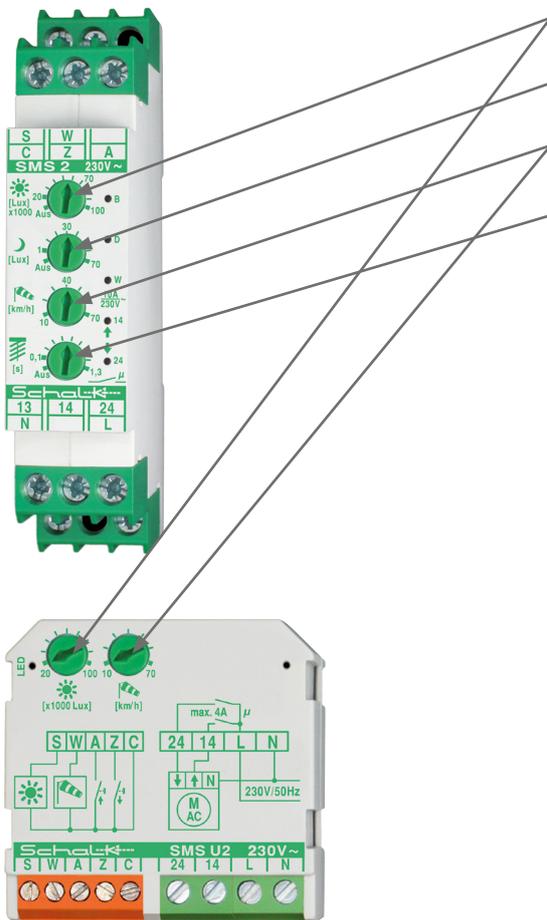
In order to manually force the awning to remain stable for a long period of time, a long press (5 seconds) of the OPEN or CLOSE button can completely deactivate the sun automation for 5 hours. Pressing the button during this time reactivates the automatic sunshade function.

Important: Counter-rotation of the blinds must be deactivated!

The automatic wind control always remains active and always works with absolute priority. This means that the system cannot be endangered by excessive wind - even in the event of accidental incorrect operation. The reaction time in the event of wind is pre-programmed and is 1 - 15 seconds, depending on the amount of excess wind. The response time when reaching sun light intensity threshold can be individually adjusted by a simple program-

ming procedure (factory setting 10 min.). The motor running time can also be programmed for individual adaptation to the awning used (factory setting 90s). If the SMS 2 or SMS U2 is used as group control, this can also be set in a programming process. In this case, the controller only releases the outputs as soon as the wind level falls below the set limit value.

Controls and indicators



Motor controllers

Light intensity threshold setting

Setting range 20,000 - 100,000 lx

Twilight threshold setting (SMS 2 only)

Setting range 1 - 70 lx

Wind speed threshold setting

Setting range 10 - 70 km/h

Adjuster for counter-rotation of blinds (SMS 2 only)

Duration of the counter-flow pulse 0.1 - 1.3s or Off (function deactivated)

Status indicator LEDs:

SMS U2: A blinking red LED (⊕) W indicates wind speed above the threshold level; blinking green (⊕) indicates brightness above the threshold level.

SMS 2: Blinking red (⊕) with LED W indicates wind speed above the threshold level, with LED B light level above the brightness threshold, and with LED D light level below the twilight threshold.

LEDs 14 and 24 indicate the corresponding motion direction.

Status indicator LEDs

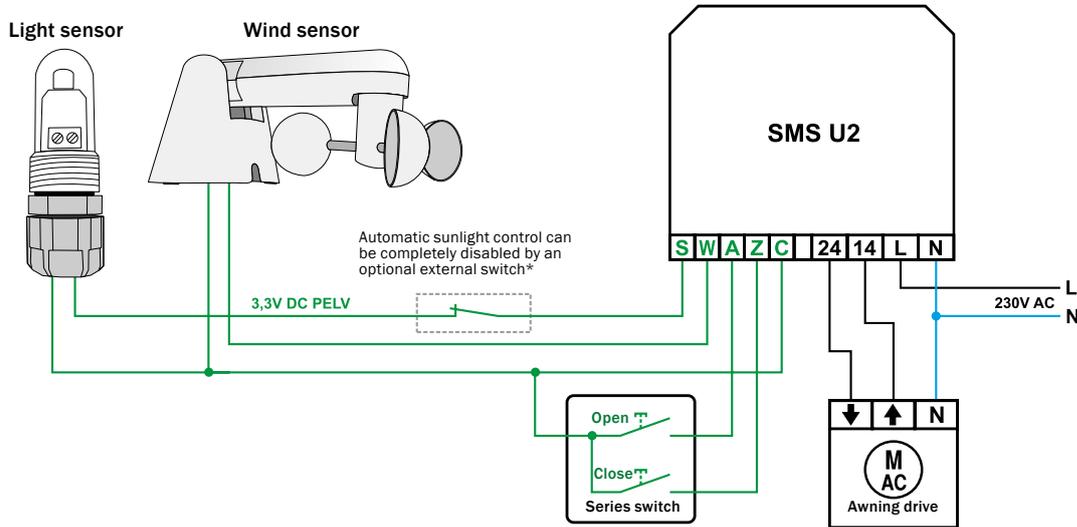
- LED off
- LED lit red
- ⊕ LED blinks red
- LED lit green
- ⊕ LED blinks green
- ⊕ LED blinks alternating red/green

Installation

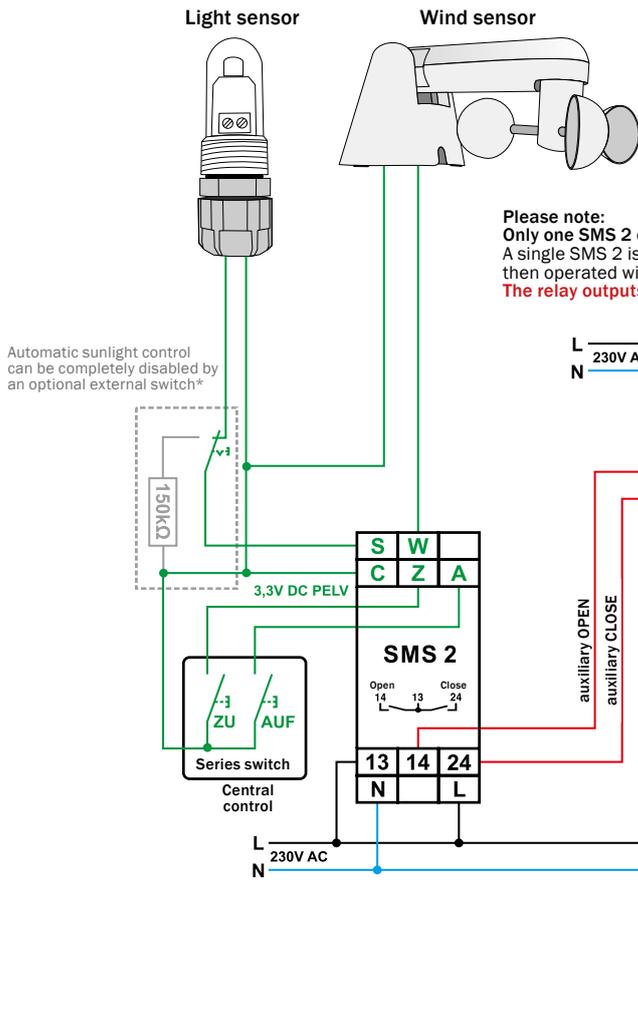
Connection example: SMS U2 as awning control

The SMS 2 controller monitors 3 adjustable parameters: Wind, shading and twilight. Shading or twilight can also be deactivated individually if required (the flush-mounted version SMS U2 does not have the twilight function).

For low voltage wiring (shown in green) control or data cables such as I-Y(St)Y 2x2x0.6 can be used (length max. 50m). The low voltage for the sensor supply is generated directly in SMS 2 (SMS 2. An additional external power supply is not required).



Connection example: SMS 1



Terminal designations SMS 2 and SMS U2:

S = Sensor Sun	14 = Relay output OPEN
W = Wind sensor	24 = Relay output CLOSE
A = OPEN button	N = Neutral
Z = CLOSE button	L = Phase 230V AC
C = Common (negative pole)	

Please note:

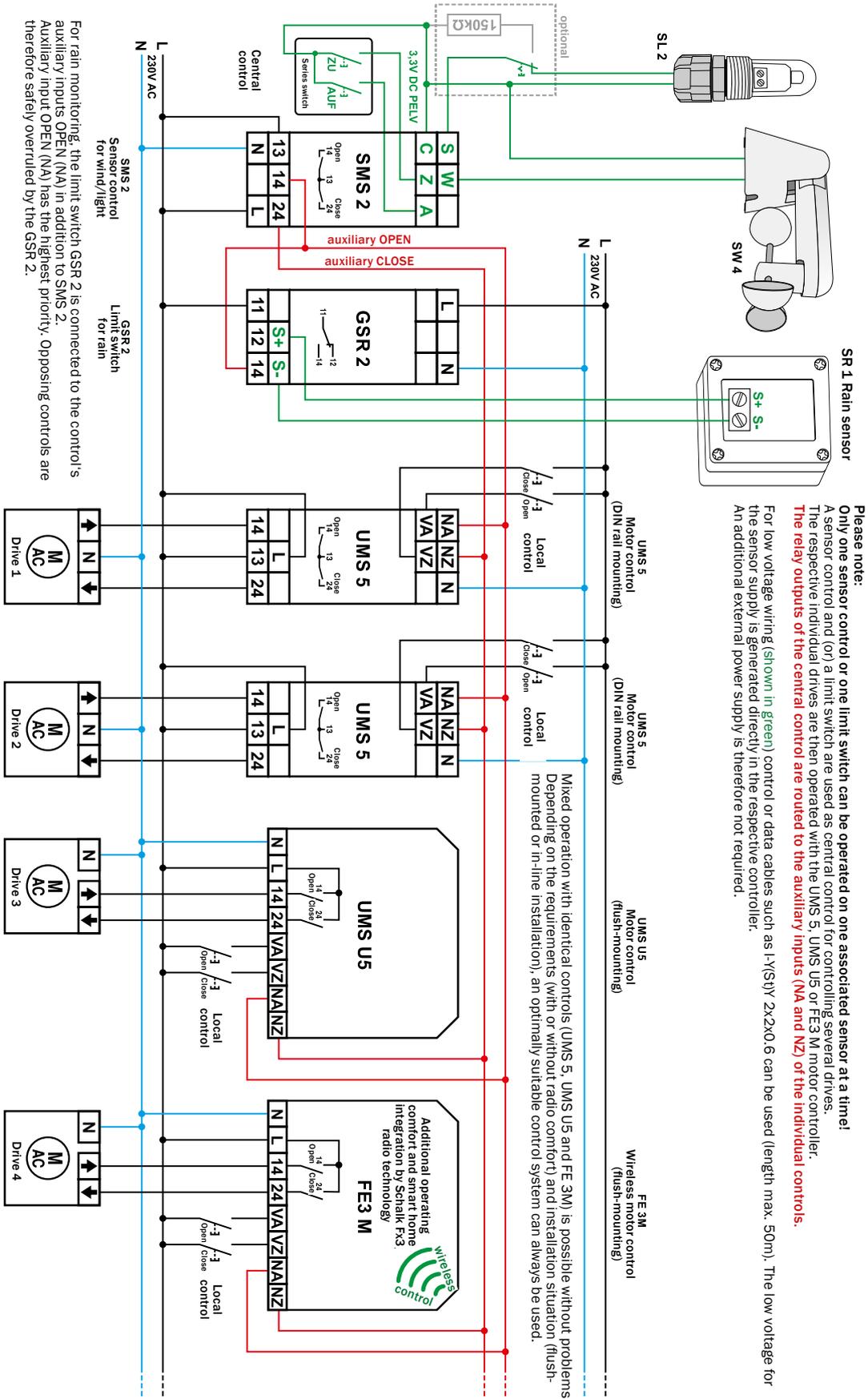
Only one SMS 2 controller (e.g. SMS U2) can be operated on one wind or light sensor.

A single SMS 2 is used as central control for controlling several drives. The respective individual drives are then operated with the UMS 5, UMS U5 or FE3 M motor controller.

The relay outputs of the central SMS 2 are routed to the auxiliary inputs of UMS 5.

*) If required, a switch can be integrated into the sensor cable to permanently switch off the automatic shading and twilight control. For SMS U2 (without twilight function) a simple switch is sufficient. For SMS 2 (with twilight function), a changeover switch must be used to switch to a 150kΩ resistor in order to prevent the twilight function from responding. This type of switch-off only deactivates the sun automation. The safety-relevant wind monitoring remains fully functional.

Application example: SMS 2 in combination with GSR 2 (limit switch for rain) as central control for light, wind and rain monitoring



Configuration and commissioning

First configure the threshold values and sensor type using the corresponding controls (see “Controls and indicators”). The following settings only have to be configured if the factory default settings are not suitable (see “Factory default settings”).

Attention!

Note: The awning must be in the home position (fully retracted) for this.

1) Press and hold the OPEN and CLOSE inputs at the same time **for 10 seconds**

This activates programming mode with the programming process.

Step 1: Adjust the response time for shading (and for twilight with SMS 2)

(SMS U2: LED lit green / SMS 2: LEDs B and D lit red)

The factory default response time is 10 minutes. This can be increased incrementally by pressing the OPEN button or decreased incrementally by pressing the CLOSE button. To skip this setting, go directly to Step 2.

One button press corresponds to 1 minute response time

(Setting range: 1–60 min)

2) Briefly press the OPEN and CLOSE buttons at the same time

This takes you to the second programming step and saves any previous settings you have made.

Step 2: Adjust the motor run time

(SMS U2: LED lit red / SMS 2: LED W lit red)

The factory default motor run time is 90 seconds. If the awning should only be extended to a specific position in automatic mode, all you have to do here is to extend it to this position by pressing the OPEN or CLOSE buttons. To skip this setting, go directly to Step 3.

(Setting range: 1–240 s)

3) Briefly press the OPEN and CLOSE buttons at the same time

This takes you to the third programming step and saves any previous settings you have made.

Step 3: Enable or disable group mode

(SMS U2: LED lit red-green / SMS 2: LEDs B, D and W lit red)

Group mode is disabled by default (factory setting). Press the OPEN button to enable group mode, or press the CLOSE button to disable group mode.

4) Briefly press the OPEN and CLOSE buttons at the same time

This exits programming mode and saves any previous settings you have made.

Factory default settings

The following default values are configured in the factory:

- Response time for sun exposure: 10min
- Motor run time: 90s
- Group mode disabled

Restoring factory default settings:

If the controller is accidentally misconfigured, this can be corrected by restoring the factory default settings.

To do this, press the **OPEN** and **CLOSE** buttons at the same time **for 20 seconds** until the LED blinks green and red (on the SMS 2, all LEDs will blink).

Info

After 30 seconds in setting mode with no button press, setting mode is exited automatically and all settings made up to that point are accepted.

- ▶ Terminal 14 retracts or raises the awning (OPEN button)
- ▶ Terminal 24 extends or lowers the awning (CLOSE button)

Functional diagrams

The local inputs „OPEN“ (A) or „CLOSE“ (Z) are edge-controlled and react with the falling edge.

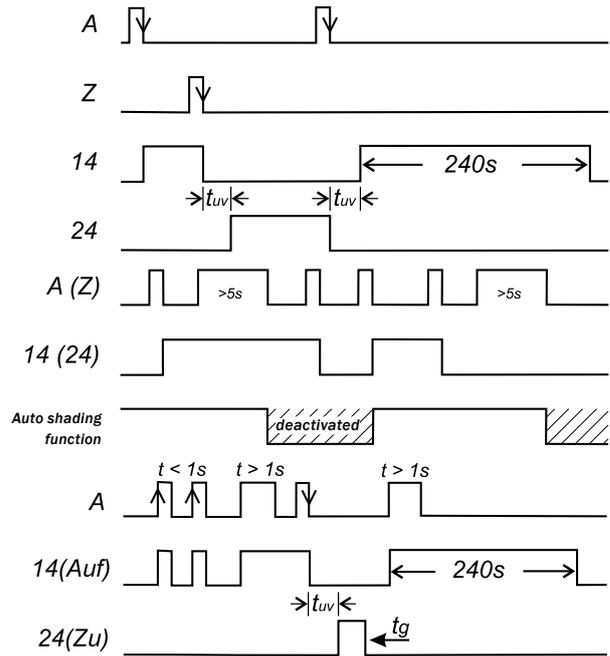
A $t_{uv} = 0.6s$ pause when switching between 14 and 24 serves to protect the awning motor.

The automatic shading system can be completely deactivated for 5 hours by pressing the button (A or Z) for 5 seconds. After this time has elapsed (or previously by pressing the awning again), the automatic system is reactivated.

Info: Counter-rotation of the blinds must be deactivated!

Blind counter-rotation function (SMS 2 only):

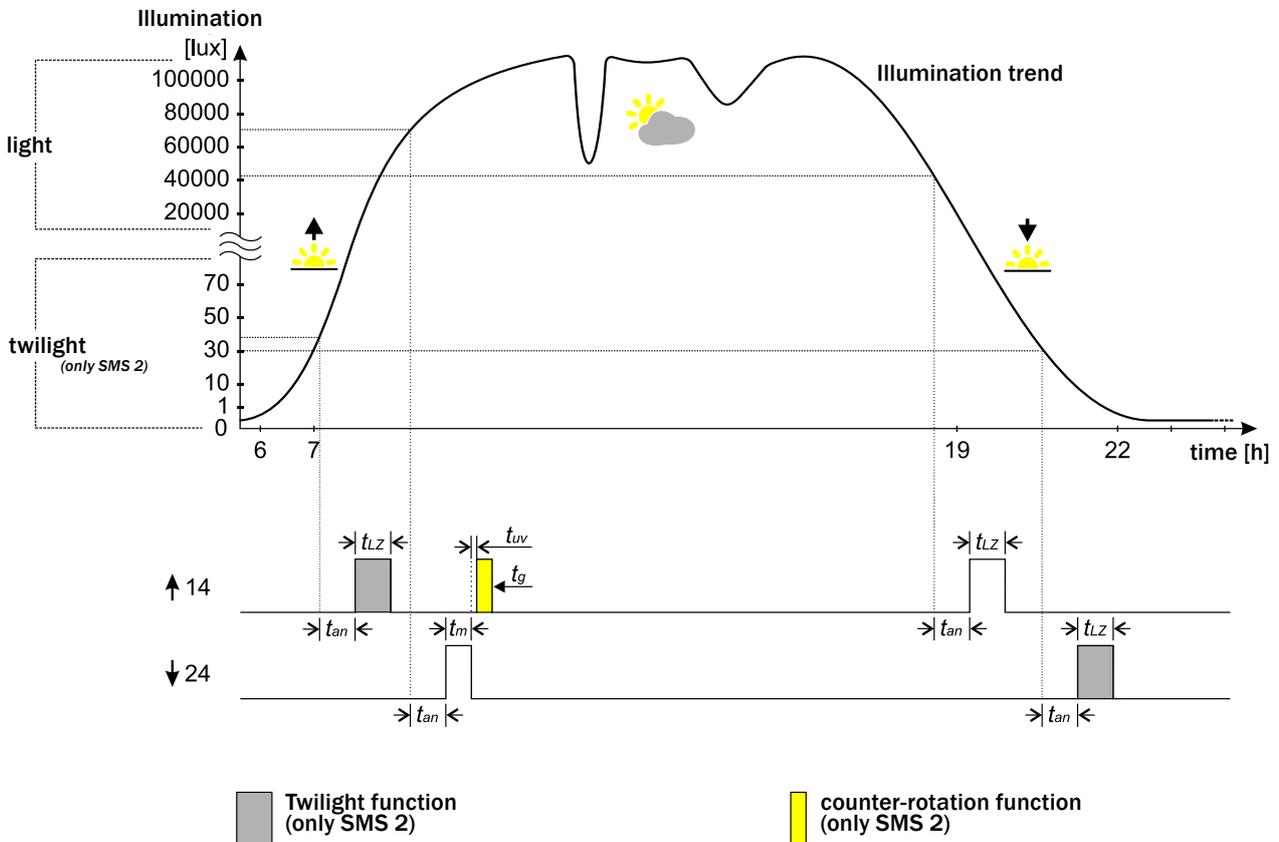
Local inputs are level-controlled when the button is pressed briefly and edge-controlled when the button is pressed long. Countercurrent pulse (tg) is triggered during shading (see running time diagram for sun) or by manual stop with A or Z.



Running time diagram „Sun

Example: light = 70000lx; twilight = 30lx (only SMS 2); $t_{LZ} = 240s$ (programmed)

$t_{an} = 10min$ (response time, user programmable); $t_m = 90s$ (motor run time, user programmable), blind auto-revers time (only SMS 2) $t_g = 0,7s$ (adjustable)

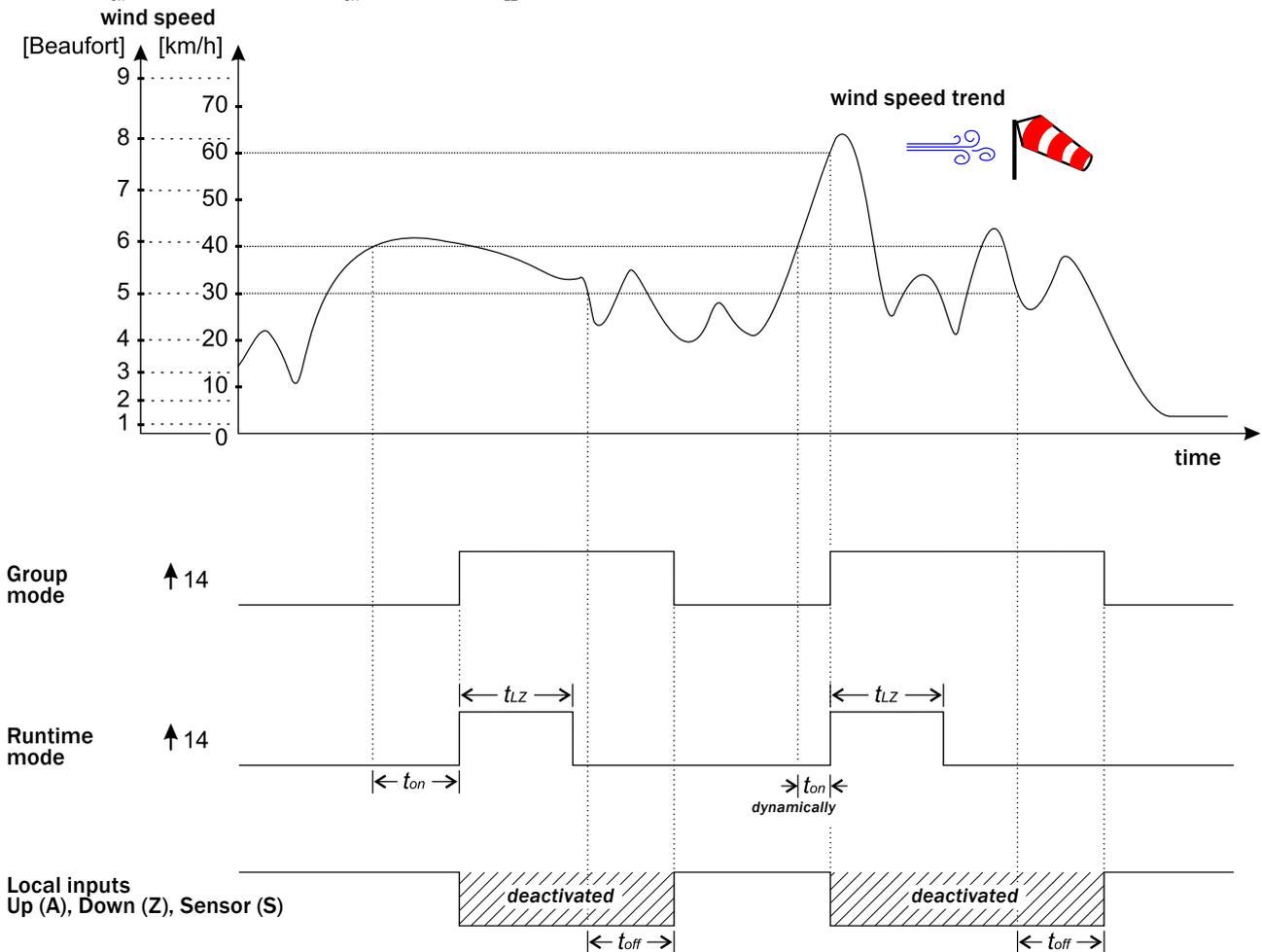


When the wind speed (frequency of the wind sensor pulse signal W) rises above the set threshold level, the local OPEN (A) and CLOSE (Z) inputs are completely blocked. The light sensor (S) also has no effect on the controller under this condition. The inputs are enabled again after the wind speed drops below the set threshold level.

The SMS 2 dynamically adjusts the response delay for wind „t_{on}“ (that means the higher the wind speed overstepping, the shorter the response time).

Runtime diagram „Wind

Example: t_{on} = 15s (dynamically); t_{off} = 15s (fixed); t_{LZ} = 240s (programmed); signal threshold wind = 40 km/h



Motor controllers

Beaufort scale by phenomenological criteria:

(only SMS 1)

Wind speed [Bft]	Wind speed [km/h]	Designation	Effect on land
0	0-1	Calm	Calm. Smoke rises vertically.
1	1-5	Light air	Smoke drift indicates wind direction. Leaves and wind vanes are stationary.
2	6-11	Light breeze	Wind felt on exposed skin. Leaves rustle. Wind vanes begin to move.
3	12-19	Gentle breeze	Leaves and small twigs constantly moving, light flags extended.
4	20-28	Moderate breeze	Dust and loose paper raised. Small branches begin to move.
5	29-38	Fresh breeze	Branches of a moderate size move. Small trees in leaf begin to sway.
6	39-49	Strong breeze	Large branches in motion. Whistling heard in overhead wires. Umbrella use becomes difficult. Empty plastic bins tip over.
7	50-61	High wind	Whole trees in motion. Effort needed to walk against the wind.
8	62-74	Gale, fresh gale	Some twigs broken from trees. Cars veer on road. Progress on foot is seriously impeded.
9	75-88	Strong/severe gale	Some branches break off trees, and some small trees blow over. Construction/temporary signs and barricades blow over.

SMS 2 / SMS U2 technical data

Operating voltage	230V 50/60Hz 10 %
Power consumption	approx. 0.66 W
Wind measuring range	10-70 km/h
Wind switching hysteresis	25 %
Wind response time	15s (dynamically)
Sun measuring range	Light intensity: 20000Lux - 100000Lux / Twilight: 1Lux - 70Lux
Sun switching hysteresis	Light intensity: 40 % / Twilight: 20%
Sun response time	10 min (1...60min programmable)
Motor run time	90s (1...240s programmable)
Relay switching dead time	0.6s
Sensor supply voltage	3.3V DC (PELV)
Ambient temperature	-10°C to +45°C
Installation orientation	Any
RAL colour	Grey 7035 / Green 6029

SMS U2:

Relay output	2 NO contacts 4A/250V AC
Auto-reverse time	0,7s (0.1 to 2.4s programmable)
AC Connections	Socket terminals with captive screws M3
- Clamping range	0.5 mm ² - 2.5 mm ²
- Strip length	6.5 mm - 7.0 mm
- Screwing torque	0.50 Nm
PELV Connections	Socket terminals with captive screws M2
- Clamping range	0.25 mm ² - 1.5 mm ²
- Strip length	6.0 mm - 6.5 mm
- Screwing torque	0.20 Nm
Dimensions	43 x 43 x 18.5mm ³

SMS 2:

Relay output	2 NO contacts potential-free, 10A/250V AC
Auto-reverse time	0,7s (0.1 to 2.4s programmable)
Mounting	Snap-on mounting on 35mm top-hat rail according to EN 60715
Connection terminals	Cage clamp terminals with captive screws M3.5
Clamping range	0.5 mm ² - 4.0 mm ²
Strip length	6.0 mm - 6.5 mm
Screwing torque	0.80 Nm
Dimensions	18 x 88(45) x 58mm ³

Technical data SW 4

Sensor type	Reed contact pulse generator
Feed line	max. 50m (at 2 x 0.25mm ²)
Dimensions	ca. 85 x 125 x 250mm ³

Technical data SL 2

Sensor type	Phototransistor
Feed line	max. 50m (with 2 x 0.25mm ²), screw connection: PG9
Protection class	IP65
Dimensions	ca. 65 x 20mm ³

Order data

Part no.	EAN	Type	Designation
SMSU29	4 046929 401180	SMS U2	Sensor-controlled motor control (wind/light), 230V AC (FMD)
SMS209	4 046929 401173	SMS 2	Sensor-controlled motor control (wind/light), 230V AC (REB)
SW4000	4 046929 301367	SW 4	Wind sensor with articular mount
SL2000	4 046929 301398	SL 2	Light sensor with clip bracket