Limit switch for wind GSW 4
Wind sensor SW 4

(Rail mount version)

Electronic monitoring for prevention of storm damage, for example to exterior louvers, awnings or equipment potentially subject to wind hazards.

Special features

- Potential free relay contacts
- Galvanically isolated sensor inputs (PELV)
- Configurable running time
- Switch threshold display
- Low power consumption

General

The GSW 4 is an universally applicable limit switche for wind monitoring.
Combined with the SW 4 wind sensor, wind forces of 2-8 (c. 10-70 km/h) can be detected. The sensor is supplied by the limit switch with a potential-free low voltage (PELV).

Applications

Prevention of storm damage to electrically-driven exterior louvers, awnings, etc.

Functional description

The GSW 4 limit switch dynamically adjusts the switch response delay "t_{on}" (the greater the wind exceeding the threshold, the shorter the configured response time). When the wind force exceeds the threshold, this is displayed by flashing the „W" LED. After expiry of the configured response delay "t_{on}" the contact is switched.

Depending on the relay mode setting, the relay either stays active for 2 seconds („2s") or it remains permanently switched during the storm phase („hold").

The configurable after-run time "t_{off}" maintains a stable switching state even if the threshold is briefly underrun.

The state of each relay is displayed on the "12" and "14" LEDs respectively.
The pulse LED (⎍) indicates the current wind pulses, and the power LED (⏻) indicates the operating state.

The details of each operating mode can be seen from the functional diagrams.

Example

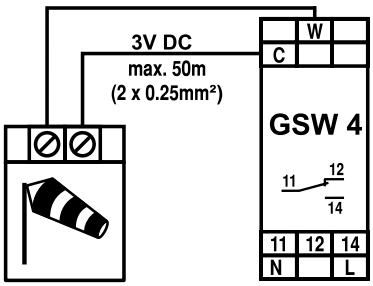
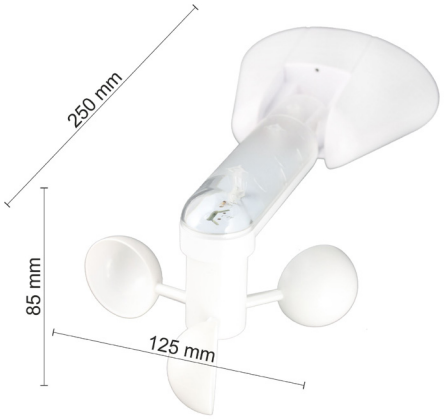


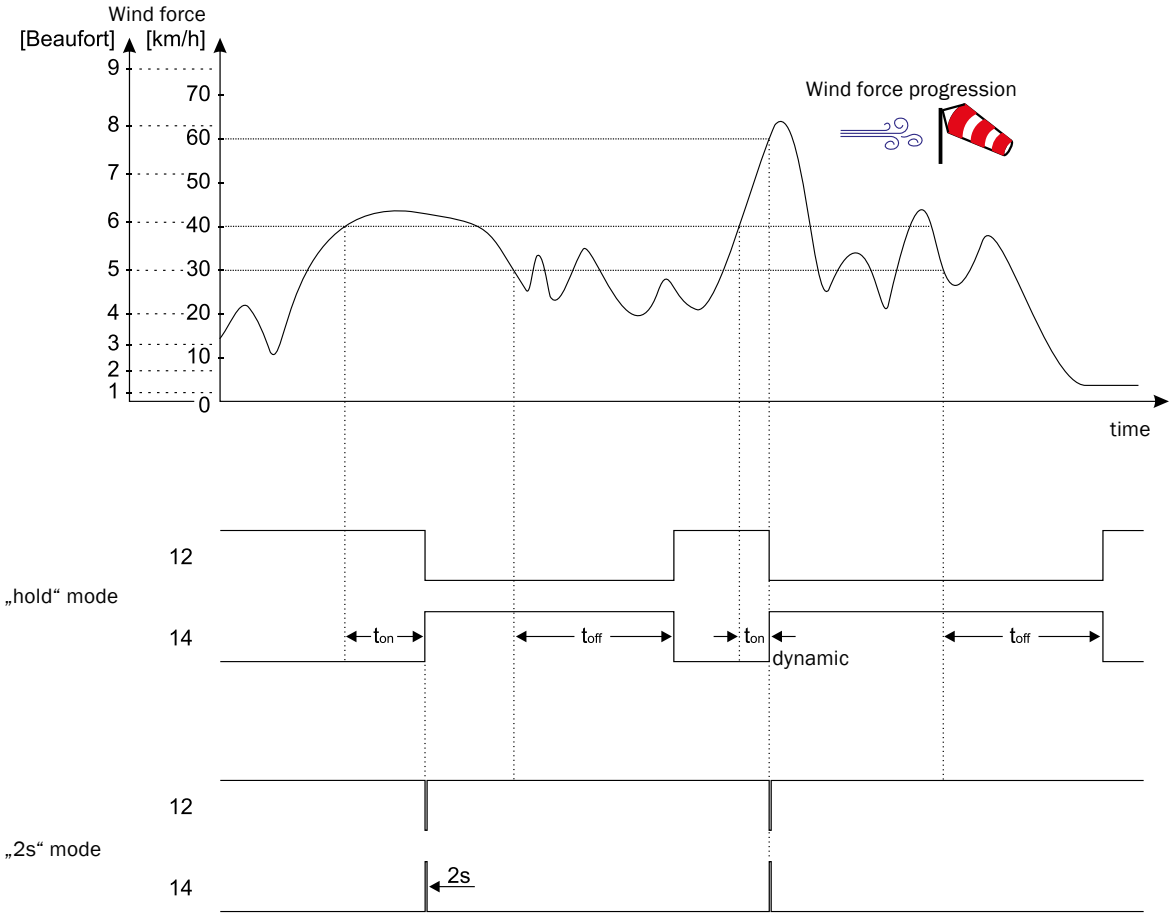
Fig. 1: Wind sensor connection

Wind sensor dimension



Timing diagram

Example: t_{on} = 15s, t_{off} = 30s, wind force threshold = 40 km/h



Beaufort scale by phenomenological criteria:

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.

GSW 4 technical data

Operating voltage	230V 50/60Hz 10%
Power consumption	approx. 0.6 W
Measuring range	wind force 2-8 (approx. 10-70 km/h)
Switching hysteresis	approx. 25 %
Response time	adjustable 1-30s (dynamical)
After-run time	adjustable 6-300s
Sensor supply voltage	3.3V DC (PELV) (GSW U2: 10V)
Relay output	1 CO 10A/250V AC
Relay contact rating	see data sheet “Relay contact load ratings”
Ambient temperature	-10°C to +45°C
Connections	Socket terminals with captive screws M3.5
Clamping range	0.5 mm² - 4.0 mm²
Strip length	6.0 mm - 6.5 mm
Screwing torque	0.80 Nm
Installation orientation	any
Mounting	Click-mount on standard 35-mm rail (EN 60715)
Dimensions	18x88(45)x58mm
RAL colour	grey 7035 / green 6029

SW 4 technical data

Wind sensor type	Reed contact pulse transducer
Connecting cable	max. 50 m (with 2 x 0,25 mm²)
Dimensions	approx. 250 x 125 x 85 mm

Order data

Part no.	EAN	Type	Description
GSW409	4 046929 301374	GSW 4	Wind switch, 230V AC 10A, 1 CO potential-free
SW4000	4 046929 301367	SW 4	Wind sensor with articular mount

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