

Manual & Data sheet

Wind-control instrument AW-1 + Wind-sensor FW-1

The wind-control instrument AW-1 with wind sensor FW-1 is a versatile wind speed measurement system for detecting and evaluation of wind velocity. It protects jalousies, marquees / blinds, shutters, mobile/ extendable masts, wind-energy systems, cranes, mobile installations, tents, ventilation flaps, roof hatches and build-ups against damage due to strong wind by detecting and gathering wind speed.

The weather-proofed (IP67) and power-free wind-sensor FW-1 generates a frequency signal to the evaluating instrument which is proportional to the wind speed.

The front display of the control instrument AW-1 shows the adjustable switching thresholds and delay times as well as the current wind intensity. The output relay, with a potential-free switch-over contact (no/nc), is switched on, if the wind speed is higher than the turn-on threshold (S_{ein}).



Connection – Installation – Commissioning:

! Connection, installation and commissioning only by qualified and skilled person with electrical education !

! Mount devices at the provided positions and wire according to the schematics !

Caution: Wrong connecting may cause damage of the instrument and sensor !

Check for correct wiring before switching on the power supply !

The AW-1 enclosure can be fixed on a standard DIN-rail as well as on a mounting plate in a switch cabinet. The screw-terminal strip is pluggable.

After switching on the power supply, the display will show the device name for 2 seconds. Hereafter the instrument is ready for operation.

The wind-sensor FW-1 is a 3-bowl anemometer made of aluminium and it is mountable on a pole/rod with a diameter of max. 50 mm. The body of the sensor is equipped with an electrical body heating to guarantee an error-free operation during winter time. The heating is powered by a separate power supply (24 V AC/DC $\pm 10\%$, 0.22 A, 5 W).

The cable connection (cable type LiY(ST)Y 4x 0.8Lg is recommended) between sensor $\leftrightarrow$ instrument should not be longer than 250 m. In case of high disturbing environment, a shielded cable is recommended. The cable shield is recommended to connect to Ground (0 V) at the control instrument.

Adjustments and readouts:

Push-button 'S / t' not pressed

Display	Readout	Description	Adjustments	
line 1	Wind XX m/s	Current wind speed	none	
line 2	S_{ein} XX m/s	Turn-on threshold	Potentiometer S_{ein}	0...40 m/s
line 3	((empty))			

Push-button 'S / t' pressed

Display	Readout	Description	Adjustments	
line 1	Wind XX m/s	Current wind speed	none	
line 2	t_{ein} XX sec	Turn-on delay time	Potentiometer t_{ein}	0...25 seconds
line 3	t_{aus} XX min	Turn-off delay time	Potentiometer t_{aus}	0...25 minutes

Readout for special cases

Display	Readout	Description	Comments
line 1	Wind ? 0 m/s	Sensor error	no sensor signal $\rightarrow$ check connection of sensor
line 1	Wind >40 m/s	Wind speed >40 m/s	Value out of range
line 2	Device name	After power-on for 2 sec	After self-test ready for operation
line 3	AKTIV	Relay activated (turned on)	Wind speed higher than S_{ein}

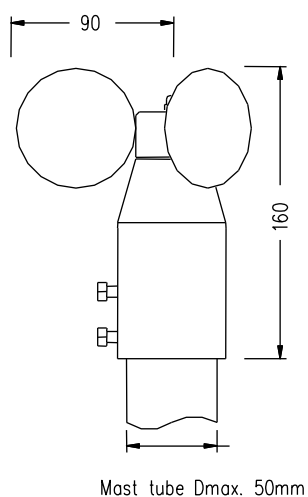
Technical data wind-control instrument AW-1

Operating voltage typ.: 230 V AC / 50 Hz $\pm 5\%$
 Input signal: 24 V square-wave signal, 0...80 Hz
 Output: potential-free change-over contact (no/nc), 230 V / 5 A (AC1)
 Display: LC-Display, 3x 12 characters, character height 5 mm
 Size housing: 70 x 75 x 120 mm (WxHxD)
 Ambient temperature: 0...+70 °C

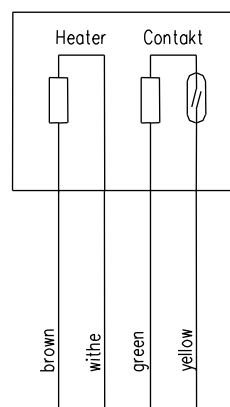
Technical data wind-sensor FW-1:

Measurement range: 0.1...40 m/s (= 144 km/h) = 0.1...40 Hz
 Output signal: 24 V square-wave-signal, 2 impulses / cycle = 1 Hz
 (potential-free Reed-contact (no), max. 30 V / 25 mA, with serial protecting resistor)
 Protection degree: IP 67 (connection cable depending on installed connection box)
 Ambient temperature: -30...+80 °C
 Integrated heating: 24 V AC/DC $\pm 10\%$, 0.22 A, 5 W (powered by control unit AW-2 or by separate power supply)
 Connection: ca. 2 m wired-ready cable, 4 wire, LiY 4x 0.25...0.34 mm² (Ø 4.3...4.8mm)
 Housing: aluminium, coated, RAL 7035
 Size body: 60 (D) x 160 (H) mm
 Size anemometer: 180 (D) x 70 (H) mm

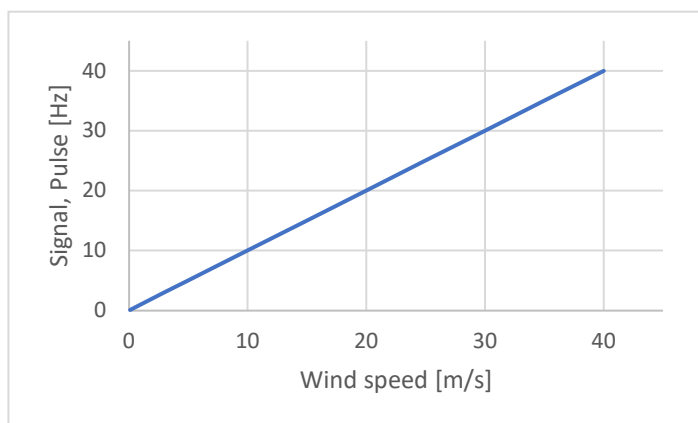
Dimensions Wind-sensor FW-1:



Connecting plan FW-1:

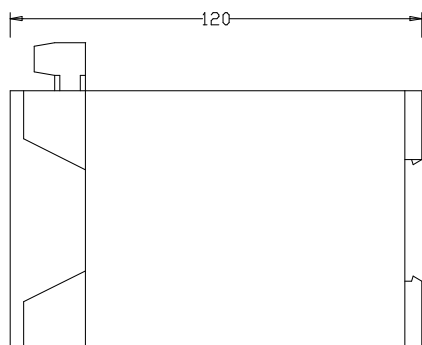


Characteristic curve:

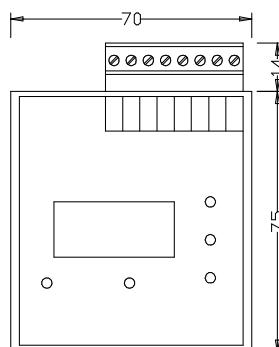


Beaufort	m/s	km/h	knots
0	~ 0	< 1	< 1
1	~ 1	1-5	1-3
2	2-3	6-11	4-6
3	3-5	12-19	7-10
4	5-8	20-28	11-16
5	8-11	29-38	17-21
6	11-14	39-49	22-27
7	14-17	50-61	28-33
8	17-21	62-74	34-40
9	21-24	75-88	41-47
10	24-28	89-102	48-55
11	28-33	103-117	56-63
12	33+	118-133	64-71
13		134-149	72-80
14		150-166	81-89
15		167-183	90-99

Wind-control instrument: Side view AW-1:



Front view AW-1:



Connecting schematic AW-1 and FW-1:

