

AP 257/41 Wind sensor
5WG1 257-3AB41
Product and Applications Description


The AP 257/41 wind sensor contains the sensor and the electronic systems for wind data analysis and bus interfacing in one compact enclosure.

The wind speed can be sent to the bus in the EIS5 format and monitored respectively for up to 3 limit values. Limit values can be selected as parameters or as communication objects. Additionally the maximum wind speed can be recorded, stored, requested and reset.

In addition, 8 AND-gates and 8 OR-gates are available with 4 inputs each for logical combinations. If the wind speed is measured at different locations / facades the logic gates may be used e.g. for the logical combination of the wind alarms from several wind sensors to an overall alarm.

The voltage supply of the electronics takes place via AC 20 V or DC 24 V safety extra-low voltage (SELV). For the transmission of this voltage, the white / yellow twisted pair of the bus cable can be used.

Application Program

The AP 257/41 wind sensor has to be used together with the application program "0701 CO wind sensor 910101" which can be configured and loaded with the Engineering Tool Software (ETS) from version ETS2 V1.3. But it is recommended to use the engineering tool software ETS3, since it presents a graphically optimal display of the setting menus of the wind sensor.

Installation Instructions

If the wind sensor should be damaged, it must not be commissioned.


WARNING

- The device must be mounted and commissioned by an authorised electrician.
- For planning and construction of electric installations, the relevant guidelines, regulations and standards of the respective country are to be considered.

Technical Specifications
Sensors

- Wind sensor:
 - Measuring range: 0 ... 70 m/s
 - Resolution: < 10% of the measuring range

Voltage supply

- Bus voltage: via the bus line
- Bus current: 9 mA
- Sensor electronics: AC 20 V $\pm 10\%$ 50/60 Hz or DC 24 V $\pm 10\%$ max. 110 mA, residual ripple < 10%, max. permissible cable length 100 m
- Power consumption: at AC 20 V: max. 2.2 VA;
at DC 24 V: max. 2.64W

Connections

- Voltage supply: plug terminals for solid conductors or finely stranded conductors 0.5 ... 1.5mm²
- Bus connection: screw-less bus terminal, single-core 0.6...0.8 mm Ø single-core, insulation strip length 5 mm.

Mechanical data

- Housing: plastic
- Dimensions: approx. 118mm x 96mm x 77mm (LxWxH)
- Weight: approx. 145 g
- Mounting: Mast or wall mounting

Electric safety

- Protection type (according to EN 60529): IP44
- Bus: safety extra low voltage (SELV) DC 24 V
- Device complies with EN 50090-2-2

EMC requirements

- complies with EN 50090-2-2

Environmental conditions

- Ambient temperature during operation: - 30 ... + 50 °C
- Storage temperature: - 20 ... + 70 °C
- rel. humidity (not condensing): 5 ... 93 %

Markings

KNX *EIB*
CE mark

complies with the EMC regulations (residential and functional buildings), and low voltage regulations

Location and Function of the Display and Operating Elements

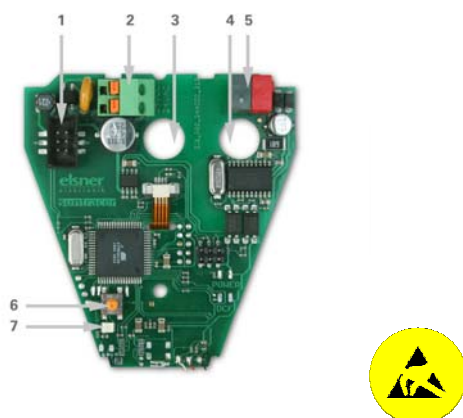


Figure 1

- 1 Slot for cable connection to the lid of the enclosure
- 2 Plug terminal for voltage supply AC 20 V / DC 24 V
- 3 Opening for voltage supply cable
- 4 Opening for bus cable
- 5 Slot for bus terminal
- 6 Commissioning button: for switching over between normal mode / addressing mode
- 7 Commissioning LED: for display of normal mode / addressing mode (off / on)

Mounting and wiring

Location

Select a position on the building where wind can be recorded by the sensor without impairment. There must be at least 60 cm free space under the wind sensor to allow for correct wind measurements and to prevent the sensor being snowed in case of snow.

The wind sensor must be mounted on a mast or a vertical wall (see fig. 2) and be aligned horizontally across (see fig. 3).

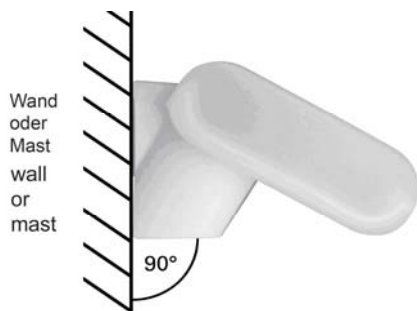


Figure 2

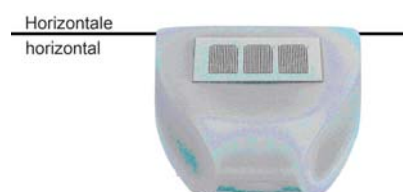


Figure 3

Mounting

The supplied combined wall / mast holder is fixed at the rear of the enclosure on delivery.

To remove it, please use a screwdriver and remove the holder on the right and the left, as shown in figs. 4 and 5. Slide the holder out towards the bottom.



Figure 4



Figure 5

Mounting on a wall:

Fasten the holder vertically with the even side to the wall, with the crescent-shaped bar to the top (see fig. 6).



Figure 6

AP 257/41 Wind sensor**5WG1 257-3AB41**Mounting on a mast / pole:

Fasten the holder vertically with the curved side to the mast / pole and the bar to the bottom (see fig. 7).

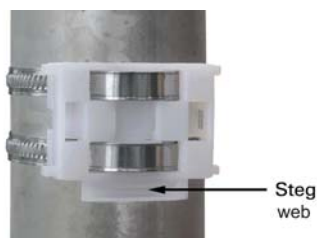


Figure 7

View of the rear wall and drilling scheme:

Dimensioning of the rear of the enclosure with holder: see fig. 8, Drilling scheme: see fig. 9.

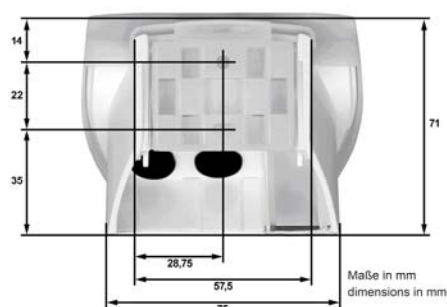


Figure 8

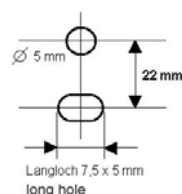


Figure 9

Preparing the wind sensor:

The lid of the wind sensor is slotted in on the right and the left at the lower edge. Remove the lid from the wind sensor (see fig. 10).

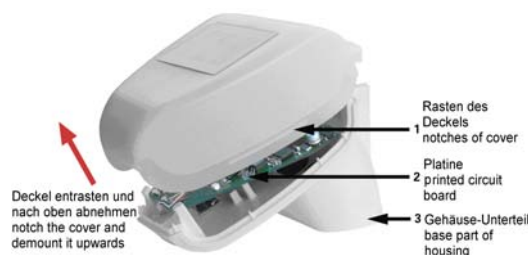


Figure 10

Be careful not to tear open the cable connection between the circuit board in the bottom part and the circuit board in the lid (cable with plug).

Guide the bus connection through the rubber seals at the bottom part of the wind sensor and connect the wire pairs for the voltage supply and the bus to the provided terminals while taking polarity into account (see fig. 2).

Fastening the wind sensor:

Close the enclosure by putting the lid over the lower part. The lid must snap into place on the left and the right with a clear "click". Check that the lid and lower part are properly snapped into place! Fig. 11 shows the correctly closed wind sensor from below.



Figure 11

Now slide the enclosure into the mounted holder from above. The pegs of the holder must slot into the rails of the enclosure (see fig. 12).



Figure 12

If needed, the wind sensor can be pulled out of the holder in an upwards direction.

Caution:

Do not open the wind sensor if water (rain) can get into the inside. A few drops are enough to damage the electronics.

Take care that the connections are correctly made. A wrong connection can destroy the electronics of the wind sensor.

During assembly care should be taken that the temperature sensor (small circuit board on the lower part of the enclosure) is not damaged. The cable connection between the circuit board in the bottom part and the circuit board in the lid may not be torn off or bent while making the connection.

The wind measurement value is first transmitted 60 seconds after initiating the supply voltage.

Maintenance

The wind sensor should be regularly checked (twice per year) for soiling and cleaned if necessary. In case of strong pollution, the wind sensor may cease to function.

During maintenance and cleaning, the wind sensor should always be separated from the bus and the supply voltage for safety purposes.

General Notes

- Any faulty devices should be returned to the local Siemens office.
- If you have further questions concerning the product please contact our technical support:



+49 (0) 180 50 50-222



+49 (0) 180 50 50-223



www.siemens.com/automation/support-request

Space for notes