

Product and Applications Description



The AP 257/42 wind sensor (see figure 1) contains the sensor, electronic systems for wind data analysis and the bus coupler in one compact enclosure.

The wind speed can be sent to the bus in the EIS5 (DPT 9) format and can be monitored with 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 in different locations / façades 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 power 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 257/42 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 weather station WS1.

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 ... 35 m/s,
Resolution: 0.1 m/s
precision at ambient temperature -20...+50°C:
±22% of measured value with air flow from 45...315°
±15% of measured value with air flow from 90...270°
(air flow onto the front equals 180°)

Voltage supply

- Bus voltage: via the bus line
- Bus current: max. 8 mA
- Auxiliary power sensor electronics:
AC 20 V (AC 12...28V) 50/60 Hz or
DC 24 V (DC 12...40V) max. 185 mA at DC 12V, resid-
ual ripple < 10%, max. permissible cable length 100 m
- Power consumption: max. 0.4 W

Operator elements

- 1 commissioning button: for switching over between
normal mode / addressing mode

Display elements

- 1 red LED: for display of normal mode / addressing
mode (off / on)

Connections

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

Mechanical data

- housing: plastic
- Dimensions:
approx. 118 mm x 96 mm x 77 mm (L x W x H)
- Weight: approx. 170 g
- Fire load: approx. 5360 kJ
- Mounting: Mast or wall mounting

Electric safety

- Degree of pollution (according to IEC 60664-1): 2
- Type of protection (according to EN 60529): IP 44
- Overvoltage category (according to IEC 60664-1): III
- 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

- Climatic conditions: EN 50090-2-2

- Ambient temperature operating: - 30 ... + 50 °C
- Ambient temperature non-op.: - 30 ... + 70 °C
- Relative humidity (non-condensing): 5 % ... 93 %

Markings

- KNX *EIB*

CE mark

complies with the EMC regulations (residential and func-
tional buildings), and low voltage regulations

Location and Function of the Display and Operat- ing Elements

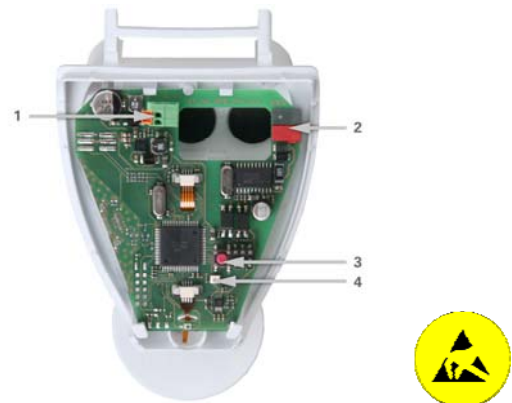


Figure 1

- 1 Spring-force auxiliary voltage terminal AC 20V / DC 24V
- 2 Bus terminal
- 3 Commissioning button
- 4 Commissioning LED

Wind sensor AP 257/42

SWG1 257-3AB42

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 station from being snowed in.

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

The mounting side of the wind sensor should be directed to north, if possible.

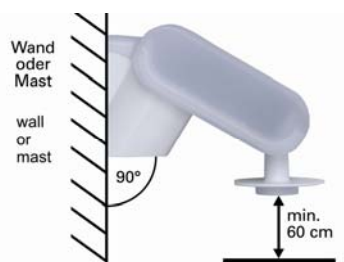


Figure 2



Figure 3

• Mounting

The supplied combined wall / mast holder is fastened to the rear side of the housing with adhesive tape on delivery.

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. 4).

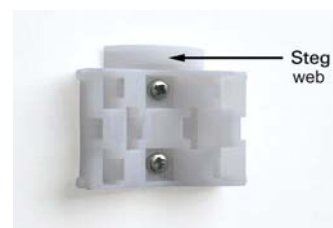


Figure 4

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. 5).

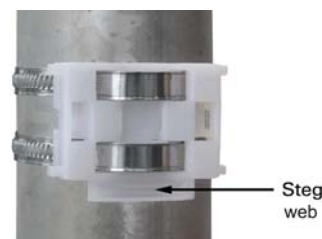


Figure 5

View of the rear wall and drilling scheme:

Dimensioning of the rear of the enclosure with holder: see fig. 6, Drilling scheme: see fig. 7.

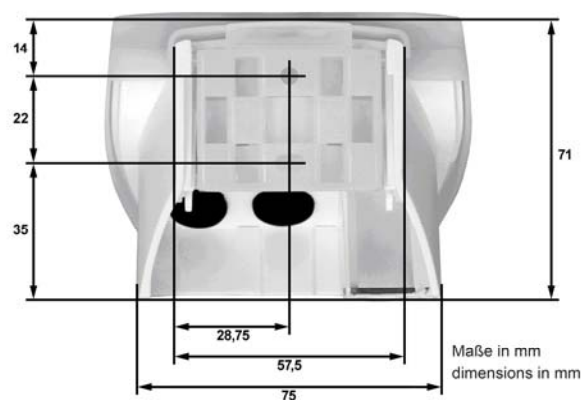


Figure 6

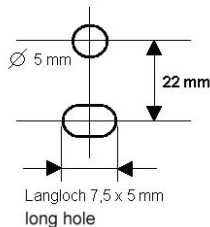


Figure 7

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. 8).



Figure 8

Guide the bus connection through the rubber seals at the bottom part of the wind sensor and connect the cable pairs for the voltage supply and the bus to the provided terminals while taking polarity into account (see fig. 1).

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. 9 shows the correctly closed wind sensor from below.



Figure 9

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. 10).

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



Figure 10

Notes:

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 wind measurement value is first transmitted 30 seconds after initiating the supply voltage.

• Maintenance

The wind sensor should be regularly (twice per year) checked 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

- The operating instructions must be handed over to the client.
- A faulty device shall be sent with a Return Good Note for Service provided by the appropriate Siemens sales office to the following address:
SIEMENS AG, Siemensstr. 10, D-93055 Regensburg
- If you have further questions concerning the product please contact our technical support.

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✉ support.automation@siemens.com

www.siemens.de/automation/support-request