

Qbus weather station QWS/P04



1 Outdoor unit Elsner P04/3

1. Product description

With the Qbus weather station it is possible to make actions happen based on local weather conditions. In addition, at Qbus you have several possibilities for visualization of the measurements. The weather station consists of different parts and has different sensors. The applications range from steering shutters, sun protection, sun tents, automatic irrigation, lighting at dusk...

Qbus weather station parts included in the delivery :

1. **Qbus SER485 interface** (SER485/APIEN), module for DIN rail, suitable for connecting Qbus installation to the RS485 application of an Elsner weather station type P03/3-RS485 or P04/3-RS485
2. **Outdoor unit weather station** type Elsner P04/3-RS485 basic
3. **Power supply** 24VDC.
4. **Connection cable** +/-10m with 4-pin screw connector
5. **Surface-mounted connectbox** (IP 55, not weatherproof)
6. **Tensioning ring** Ø 40-60 mm for mounting on pole
7. **Stainless steel screws** with round head 4mm x 50mm and plugs of 6mm x 30mm for wall mounting.

The SER485/APIEN is the interface that connects the Qbus bus to the RS485 bus of the weather station, and has a unique serial number that is entered in the configuration software Systemmanger III. All programmed data remains stored internally in a permanent memory.

The outdoor unit / weather station has the following sensors:

Brightness measurement with 3 separate lux measurements: East, south and west. Recognition of twilight / dawn.

Wind measurement: The wind strength measurement takes place electronically and therefore silently and reliably, even in hail, snow and sub-zero temperatures. Even turbulent air and anabatic winds (slope winds) near the weather station are recorded.

Temperature measurement

Heated precipitation sensor: No false reports due to fog or dew. Dries quickly after precipitation has stopped.

2. Safety

Read the full manual before installing and activating the module.

Attention

- Installation, commissioning and maintenance of the devices must be carried out by an authorised electrician.
- Do not open the device. The warranty expires with opening of the module or parts.
- Risk of electric shock in the event of contact with live parts.
- Risk of injury while working at the weather station. Make sure that there can be no unwanted control of, for example, roller shutters.
- Never use high pressure cleaners or steam for cleaning.

3. Installation and cabling

Mounting SER485/APIEN: Click the device on the DIN rail in accordance with DIN

EN50022. The SER485/APIEN and the 24VDC power supply must be mounted in a suitable distribution board with sufficient ventilation.

Qbus-bus cabling:

Any shielded cable with conductors of at least 2 x 1 mm² can be used as a bus cable. The green screened EIB cable is also permitted when the conductors are used per 2 to obtain a section of at least 2 x 1 mm. The shielding of the bus cable must, and may only be attached to, at one end on the general grounding of the building. Connect this bus to the orange terminal at the bottom of the SER485/APIEN.

RS485-BUS:

The wiring between the blue clamps of the SER485/APIEN and the external unit, must be done with maximum solid conductors of 0.8 mm². Use the supplied black connection cable. You can extend with a CAT5 shielded cable, or the green EIB/KNX cable. The shielding of the bus cable must be connected together with the ground wire to the ground terminal of the SER485/APIEN. Connect the weather station to the power cord using the 4-pin connector. When mounting on a façade, it is advisable to provide a tube of 20mm diameter or 3/4 with drawstring. Please note that the supplied connection cable is +/- 10m long. When connecting this connection cable as a replacement or extension to another bus, the shielding must also be connected.

Power Supply:

The SER485/APIEN is powered by the QBUS BUS. The power supply of the weather station is supplied via the supplied separate 24 VDC DIN rail power supply. Connect the 0V terminal (DC side!!!) of this power supply to the mass clamp of the SER485/APIEN.

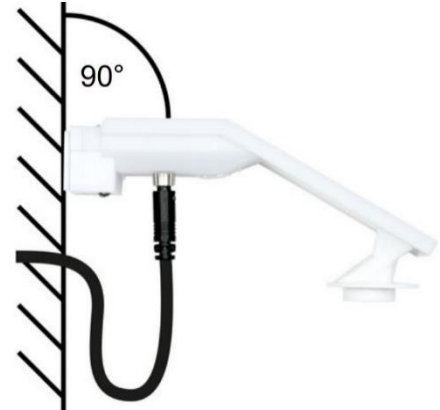
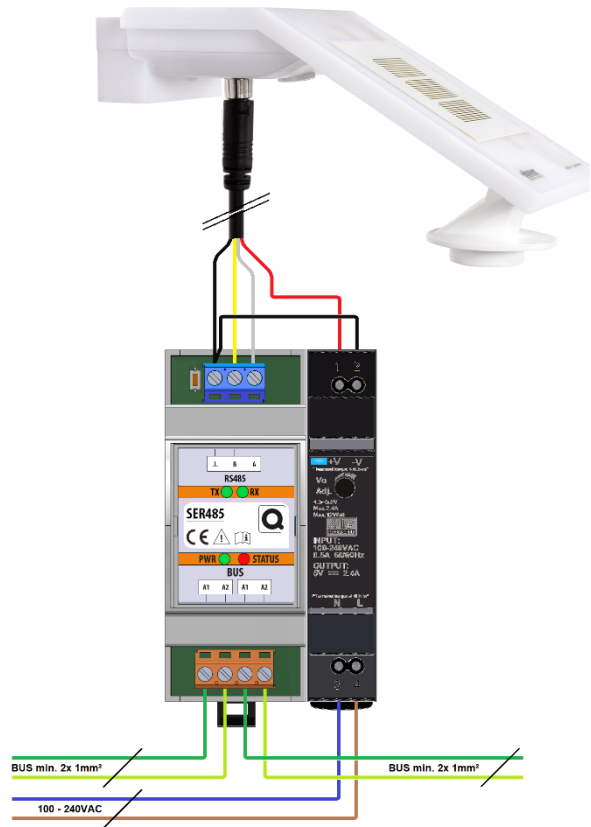
LED Indicators SER485:

Green LEDs:

- PWR: ON = power supply supplied from bus.
- TX: ON = data is sent to RS485 system
- RX: ON = data received from RS485 system

Red LED: Status LED = ON for 2 seconds during startup. Also ON during programming and communication between Qbus and RS485.

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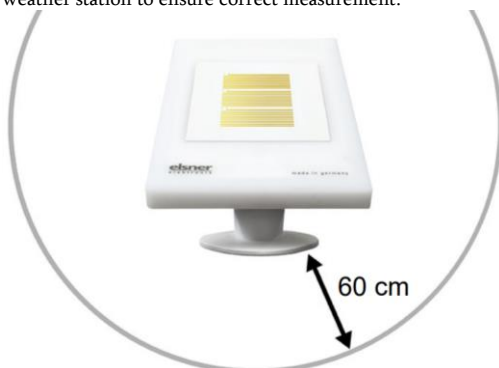
Place the weather station horizontally.



Mounting Weather Station:

Install the device outside where the sensors can measure wind, rain and ambient light unhindered. Never mount the weather station under structural parts where water can still drip onto the rain sensor after it has stopped raining or snowing. Do not place the weather station in the shade of a structure or tree.

Leave at least 60 cm around the sides, in front of and below the weather station to ensure correct measurement.



Place the weather station horizontally on a vertical wall or pole. Then place the supply line in a loop to the guide in the wall or junction box. This can drain rain and prevent water droplets from penetrating into the wall or junctionbox.

For installation in the northern hemisphere, you need to align the weather station so that it is facing south. In the southern hemisphere, the weather station should be facing north.

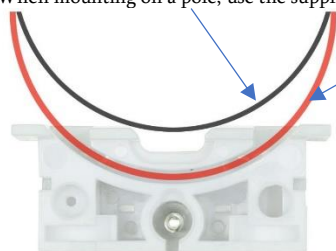


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When mounting on a wall, use the included plugs and screws. The holes are center distance 30mm apart. Make sure the arrows point upwards (TOP).



When mounting on a pole, use the supplied tensioning rings.



Make sure the arrows point upwards (TOP). Insert the tensioning ring into the recess of the mounting plate and slide it over the pole. Tighten the tensioning ring.



- 1 Slide the device over the mounting plate from above .
- 2 For protection, screw the device to the mounting plate.
- 3 Screw the connector of the supplied connection cable onto the connection point at the bottom of the unit.

Connect the end of the cable to the blue connector of the SER485/APIEN and to the terminals of the 24VDC power supply.
 Color code connection cable:
 RS485 data: White = A; Yellow = B
 Power supply: Red = +24VDC
 Common / Mass = Black

ATTENTION!

Sensitive wind sensor.

- After installation, remove the transport protection sticker.
- Do not touch the sensor on the wind indicator recessed at the bottom.
- The correct wind value will only be displayed after approximately 30 seconds after the voltage is connected.

4 maintenance

Attention! Risk of injury caused by automatic controls. An automation system can start moving parts and therefore put people at risk.

Always interrupt the voltage during work at the weather station, and take care of the necessary safety measures.

The appliance should be checked twice a year or regularly for your own safety and cleaned if necessary.

In the event of excessive dirt deposits, the sensor may no longer work properly.

5 Technical data

General specifications SER485/APIEN

- Power supply: bus
- Ambient temperature:
- Operating temperature: 10°C to 50°C
- Storage temperature: -10°C to 60°C
- Maximum humidity: 93 %, no moisture condensation
- Bus power supply: 30 mA at nominal 13.8 V
- Max. mounting height: 2,000 meters.

SER485/APIEN Connections

- The maximum distance, of the signal between the SER485/APIEN and the weather station, is 1000m. However, the maximum **distance between the 24VDC power supply and the weather station is 50m!**

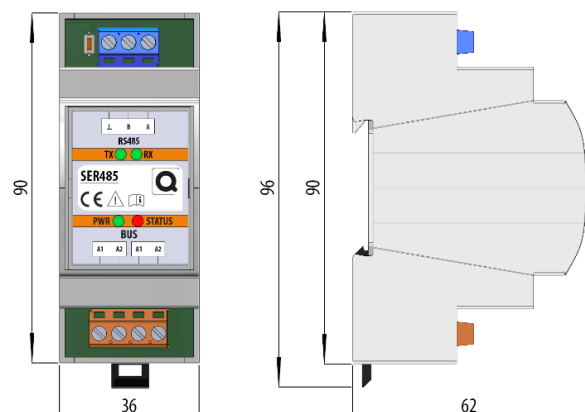
Physical specifications SER485/APIEN:

- Housing: plastic, self-extinguishing according to UL94
- Degree of protection: IP20, EN60529
- Installation: quick assembly on DIN rail, width 2 modules
- Dimensions (H x W x L): 62 mm x 90 mm x 36 mm
- Weight: about 0.072 kg

CE:

- Bus: 13.8 VDC low voltage/
- Non-toxic, in accordance with WEEE/RoHS
- Corresponding EN 60730-1:2000-11 +A11 2002

Dimensioning SER485/API:



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General specifications Elsner weather station P04/3-RS485

- Power supply: 24VDC +/-10%
- Maximum power consumption 100mA (24VDC)
- Operating temperature and measuring range: -30°C to 50°C
- Storage temperature: -30°C to 70°C
- Accuracy temperature measurement 0.1°C
- Measuring range wind sensor: 0 to 35m/s
- Wind measurement accuracy: +/-15%
- Measuring range lux measurements: 0 to 99000lx
- Resolution lux measurements: 1 lux up to 300 lux, 2 lux to 1000 lux, 25 lux to 99 000 lux
- Accuracy lux measurements: between 30 and 30000lux +/-15%

Elsner P04/3-RS485 Connections

- The maximum distance, from the signal between the SER485/APIEN and the weather station, is 1000m. However, the maximum distance between the 24VDC power supply and the weather station is 50m!
- **Up to five SER485/APIEN** in tree structure can be connected in parallel. If more interfaces need to be linked, please contact Qbus Support for an appropriate solution. In this way you can link more Qbus installations to the same weather station

Physical specifications Elsner P04/3-RS485:

- Housing: White translucent plastic housing UL94
- Dimensions: +/- 62 x 71 x 152 (W x H x D, mm)
- Degree of protection: IP44
- Installation: on the wall via 2 screws and plugs, on a pole d.m.v. a tensioning ring.
- Dimensions (H x W x L): 62 mm x 90 mm x 36 mm
- Weight weather station incl. Mounting: +/- 90g
- The product complies with the provisions of the EU Directiven

