

# QBUS WEATHER STATION (QWS/APIEN)

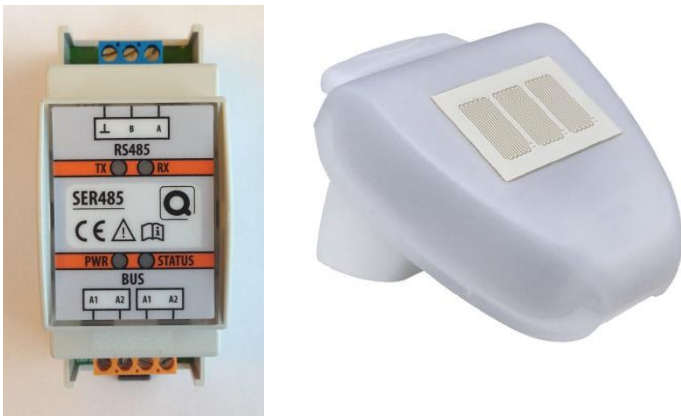
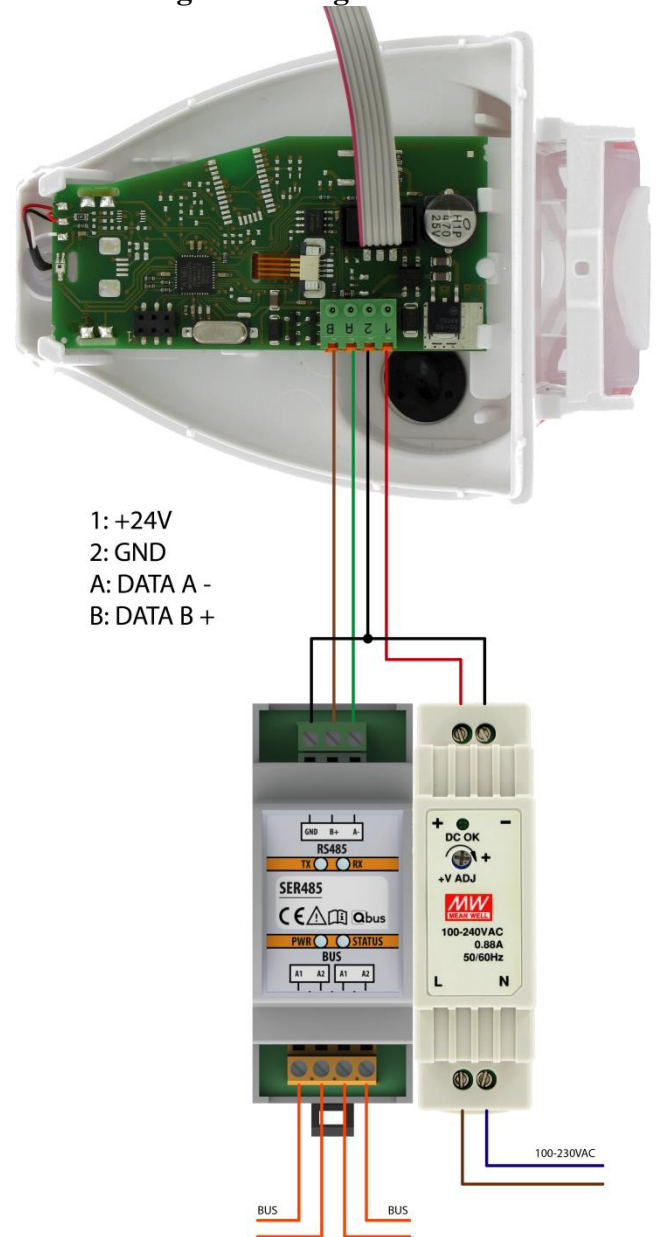


Figure 1 : Qbus Weather Station APIEN (includes Interface and Weather Station with Power Supply)

## 3. Mounting and wiring of the SER485



1: +24V  
 2: GND  
 A: DATA A -  
 B: DATA B +

## 1. Product Description

The Qbus Weather station measures temperature, precipitation, wind speed and brightness (eastern, southern, and western sun, dawn/twilight). The Qbus weather station consists of the following modules:

1. **Qbus SER485 interface (SER485/APIEN):** Module for DIN-rail, suitable for interfacing a Qbus installation with the Weather Station Module.
2. **Weather Station**
3. **Weather station power supply (24V)**

Each SER485 module has a unique serial number enabling programming anywhere and anytime. All programming remains internally stored in a nonvolatile memory.

## 2. Safety Instructions

Read the complete manual before carrying out the installation and activating the system.

### WARNING

- The devices must be mounted, commissioned and serviced by an authorized electrician in accordance with the country-specific regulations.
- The SER485 device is exclusively suitable for DIN-rail mounting EN50022. It must be mounted in a fire-enclosure with ventilation holes.
- The devices must not be opened. The guarantee provisions will be void when the module has been opened.
- Electrical shock when live parts are touched.

### FITTING:

Snap device onto DIN rail to DIN EN50022.

### BUS WIRING:

It is recommended to use the Qbus cable or any other cable with minimum 2 x 1mm<sup>2</sup> conductors as a bus lead. The green protected EIB wire is also allowed when the conductors are guided per 2 in order to obtain a section of minimum 2 x 1mm<sup>2</sup>.

**IMPORTANT : THE BUS CABLE SHOULD BE SHIELDED AND GROUNDED! THE GROUNDING SHOULD BE CONNECTED TO THE OVERALL GROUNDING OF THE BUILDING.**

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## RS485:

The wiring between the weather station and the RS485 connector needs to be done with massive conductors of up to 0,8mm<sup>2</sup> (use typical telephone cable J-Y(ST)Y 2x2x0,8). The green EIB wire could also be used (use conductors separately).

## POWER SUPPLY:

The SER485 is powered by the bus. The weather station is powered by the separate 24V DIN-rail power supply (included).

## LED INDICATION SER485:

Green lights :

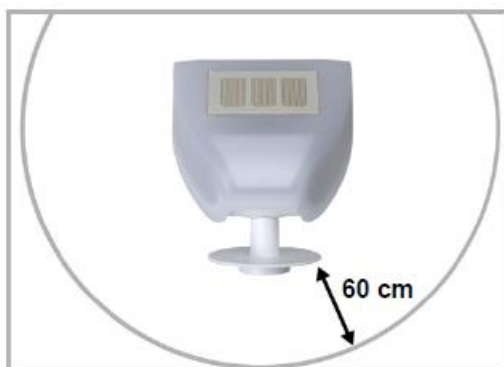
- PWR: ON = power is being supplied from bus.
- TX: ON = data is being transmitted to RS485 system
- RX: ON = data is being received from RS485 system

Red light: Status LED = ON for 2 seconds during start-up. Also ON during programming and when translation between Qbus and RS485 is ongoing.

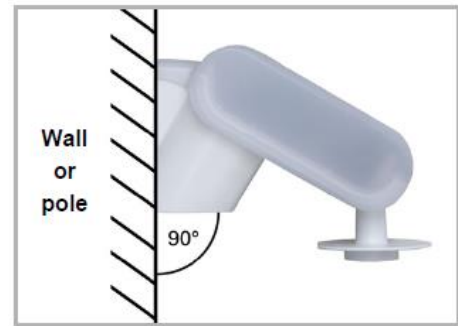
## 4. Mounting and wiring of the weather station

Choose an installation position outside where wind, rain and sun can be measured unhindered by the sensors. Do not install the weather station underneath any structural parts from which water can still drip onto the rain sensor after it has stopped raining or snowing. The weather station must not be shaded by any structures or trees.

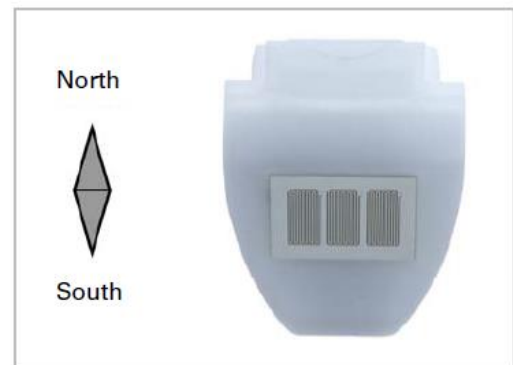
There must be at least 60 cm of space around the sides, in front and under the weather station to ensure accurate measurements.



Place the weather station horizontally on a vertical wall or pole.

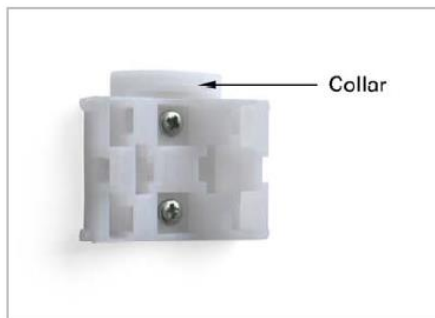


For installation in the northern hemisphere, the weather station must be aligned to face south. In the southern hemisphere, the weather station must face north.

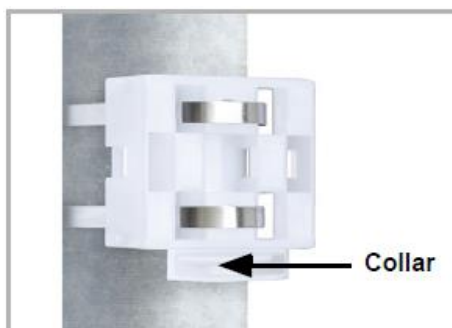


The weather station comes with a wall/pole mount. Fasten the mount vertically on the wall or pole. When putting the weather station on a wall, put the flat side of the mount to the wall and the crescent-shaped collar upwards.

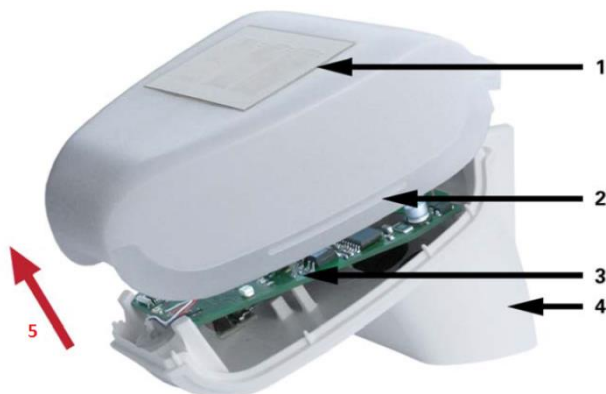
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When putting the weather station on a pole, put the curved side of the mount on the pole and the crescent-shaped collar downwards.



The weather station cover (with the rain sensor) snaps in on the left and right along the bottom edge (see figure below). Remove the weather station cover. Proceed carefully and **DO NOT TEAR OFF THE WIRE** connecting the PCB in the bottom part with the rain sensor in the cover.



- 1 = Cover with rain sensor
- 2 = Cover snaps
- 3 = electronics
- 4 = Bottom part of housing
- 5 = Unsnap cover and remove upwards

Push the connecting cable through the rubber seal on the bottom of the weather station and connect the power and bus-cables to the terminals 1/2(power) and A/B (bus). See also under “Mounting and Cabling”.

Close the housing by putting the cover back on the bottom part - the cover must snap in on the left and right with a definite “click”.

Then push the housing from above into the fastened mount. The bumps on the mount must snap into the rails in the housing.



Remarks:

- Do not open the weather station if rain might ingress. Even some drops can damage the electronics.
- Do not damage the temperature sensor (small blank part at the bottom part of the housing) during installation.
- The correct wind value might only be supplied 10 seconds after the power supply has been connected.
- The weather station sends data every second.
- Clean the weather station every 6 months (wipe off the rain sensor, clear dust from the wind sensor).

## 5. Technical Data

### GENERAL SPECIFICATIONS SER485

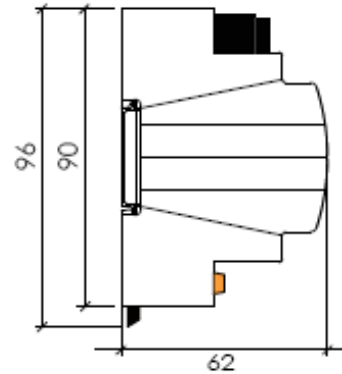
- Power supply : bus
- Ambient temperature :  
 Working temp. range : 10°C to 50°C  
 Storage temp. range : -10°C to 60°C
- Maximum humidity : 93%, no moisture condensation
- Bus load : 30mA at nominal 13,8V
- Max installation altitude : 2.000 meters.

### GENERAL SPECIFICATIONS WEATHER STATION

- Power supply : 24V DIN-rail module (included)
- Ambient temperature :  
 Working temp. range : -30°C to 50°C  
 Storage temp. range : -30°C to 70°C
- Temperature sensor:

# QBUS WEATHER STATION (QWS/APIEN)

- Measurement range -40°C to +80°C
- Resolution: 0,1°C
- Accuracy +/- 1,5°C
- Rain sensor
  - Heated (1,2W)
- Wind sensor:
  - Measurement range 0-70m/s
  - Resolution 0,1m/s
  - Accuracy +/- 15-22%
- Brightness:
  - Measurement range 0-99000 lux
  - Accuracy +/- 35%



## PHYSICAL SPECIFICATIONS SER485

- Housing : Plastic, self-extinguishing according to UL94-V0
- Protection Degree : IP20, EN60529
- Installation : rapid mounting on DIN-RAIL, width 2 modules
- Dimensions (HxWxD)  
: 62mm x 90mm x 36mm
- Weight : approx. 0,072 kg

Width = 2 modules.  
 1 Module = 17 mm.

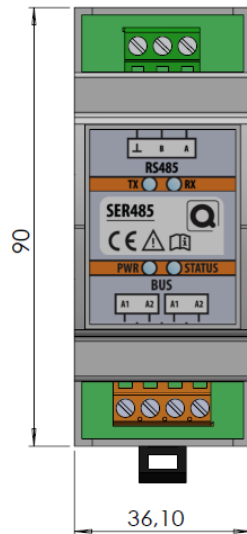
## 7. Guarantee provisions

Period of guarantee : 2 years from date of delivery.  
 Guarantee will not be accepted if the device has been opened!  
 Any faulty devices should be send postage-free with a description of the defect to our central customer service office :

**QBUS N.V.**  
 Joseph Cardijnstraat 19  
 9420 Erpe-Mere  
 Belgium  
 T +32 53 60 72 10  
 F +32 53 60 72 19  
 Email : [support@qbus.be](mailto:support@qbus.be)

## PHYSICAL SPECIFICATIONS WEATHER STATION

- Housing : Plastic material
- Protection Degree : IP44
- Installation: On-wall mounting
- Dimensions (HxWxD): 77mm x 96mm x 118mm
- Weight : approx. 0,16 kg



## CE

- The product complies with EN 60730-1:2000-11 +A11 2002

## 6. Dimension Diagram SER485

Dimensions in mm.