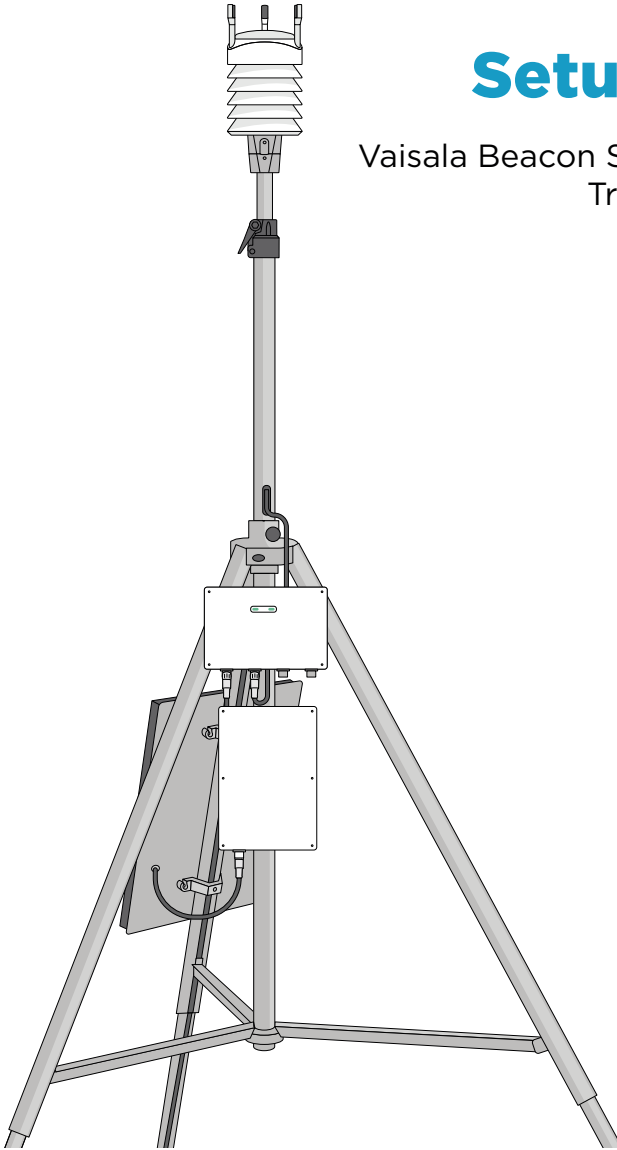


# Setup Guide

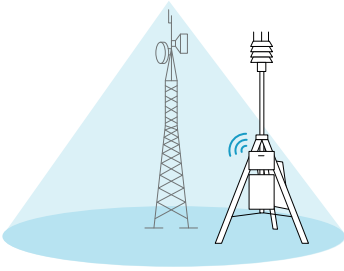
## Vaisala Beacon Station BWS500 Tripod Installation



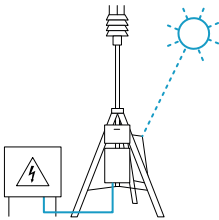
# Vaisala Beacon Station BWS500

Vaisala Beacon Station BWS500 is a compact weather station for environmental monitoring. This product is intended for outdoor use and can be used in wet locations.

For the most reliable measurements, choose a site that represents the conditions that you wish to measure. Nearby buildings, trees, and heat sources can distort the measurements.



Check that the installation site is within the cellular network coverage area of your network operator.



For powering BWS500, the site must have one of the following:

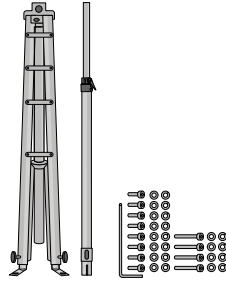
- Power supply lines for AC (mains) power
- Sufficient amount of sunshine for solar panel and DC powering

Secure the tripod in place to ensure safety during heavy winds. Clean the device with a soft cloth and water when needed.

Follow the recommended installation order, as well as local and state legislation and regulations on occupational safety.

## Tripod Mast DKT504

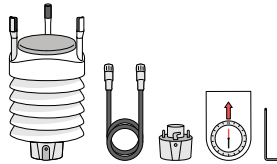
The tripod is a portable mast with adjustable legs and telescopic mast. The tripod can easily be collapsed to fit in a case for transportation.



- Tripod Mast DKT504
- Mounting brackets for EGW501, PSU502, and solar panel attached
- Screws, washers, and Allen key 5 mm

## Vaisala Weather Transmitter WXT536

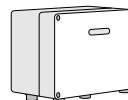
WXT536 measures pressure, temperature, humidity, precipitation, wind speed, and wind direction.



- Weather Transmitter WXT536
- Mounting kit for  $\varnothing$  30 mm (1.18 in) pole mast
- M12 cable to connect WXT and gateway
- Compass for aligning WXT to North (available as accessory)
- Allen key 2.5 mm (included with mounting kit)

## Vaisala Beacon Edge Gateway EGW501

EGW501 handles data transfer between sensors and Vaisala cloud.



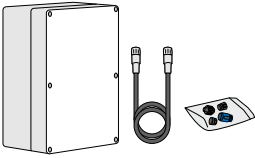
- Vaisala Beacon Edge Gateway EGW501

## Power Supply Unit PSU501 for AC (mains) or AC/DC power

PSU501 is for sites where AC (mains) power is available. Alternatively, PSU501 can function as AC/DC power supply unit. PSU501 contains a backup battery to ensure operation during power failure or outage.

## Power Supply Unit PSU502 for DC power

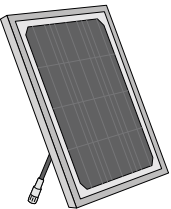
PSU502 is for use with the solar panel or for external DC. When combined with solar panel, PSU502 converts solar energy into DC power and stores it in a battery.



- Power Supply Unit PSU501 or PSU502
- M12 cable to connect PSU and gateway
- AC connector (only for PSU501)

## Solar Panel SOL501

Solar panel can be combined with PSU501/PSU502 to provide solar energy to the system.



- Solar panel

Note! To ensure sufficient power, solar power can be used only with non-heated version of WXT536.

## Viewing the observations in Vaisala Wx Beacon

Vaisala Wx Beacon is cloud-based software for viewing measurement data from Vaisala sensors.

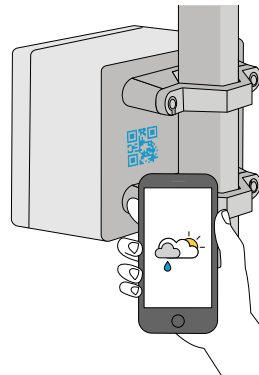
Wx Beacon collects the data automatically. Check the observations from your account in Wx Beacon.

To use Wx Beacon, you need a computer or mobile device with Internet connection.

[wxbeacon.vaisala.com](http://wxbeacon.vaisala.com)



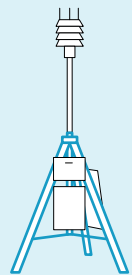
**Tip:** Scan the QR code on the back of the gateway to access read-only view of the measurement data in Wx Beacon.



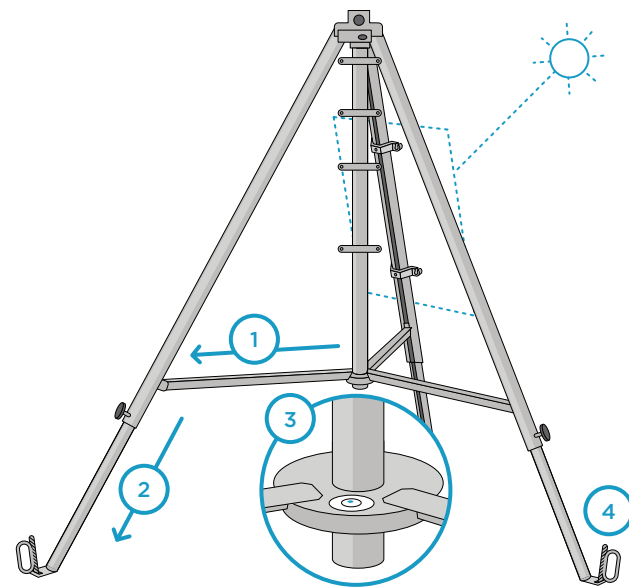
**More information:**

[www.vaisala.com/bws500-support](http://www.vaisala.com/bws500-support)

# 1 Set up tripod



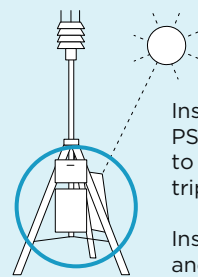
Level the station to ensure correct wind measurements.



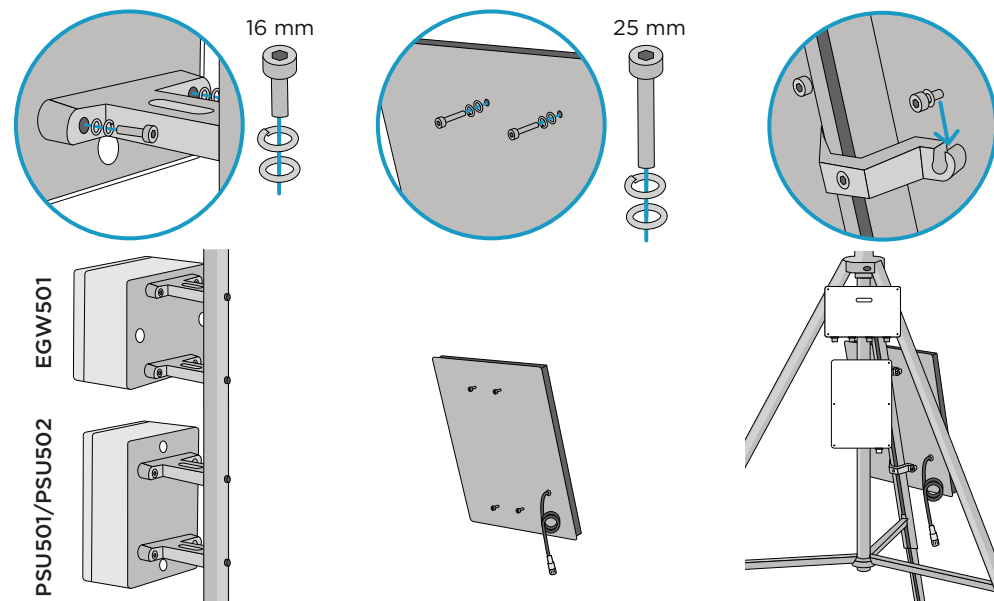
Orient the leg with solar panel brackets towards the midday sun.

- 1.1 Open tripod legs.
- 1.2 Adjust the legs to level the tripod. Tighten the screws with fingers.
- 1.3 Check leveling with a spirit level.
- 1.4 Attach ground pegs to keep the tripod in place.

# 3 Install edge gateway, power unit, and solar panel



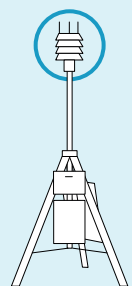
Install EGW501 and PSU501 or PSU502 to the brackets in tripod.  
Install solar panel and check orientation towards the midday sun.



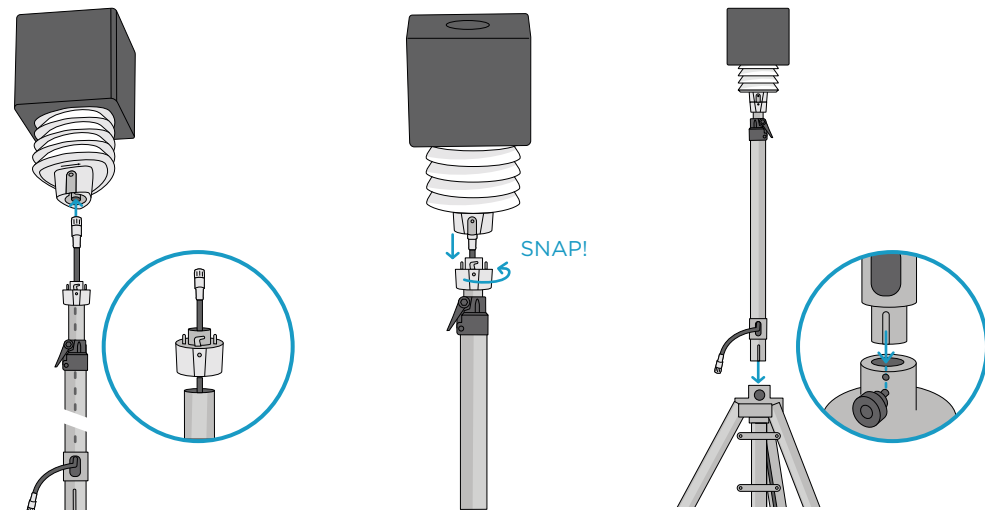
- 3.1 Attach edge gateway and power supply unit to the tripod mounting brackets with 16 mm screws.
- 3.2 Attach 25 mm screws to solar panel.
- 3.3 Slide the solar panel to the brackets. Tighten the screws.

# 2 Install sensors

## Weather transmitter WXT536



Install WXT536 to the top of the tripod mast.  
Keep the upper part of the protective cushion on during the installation.

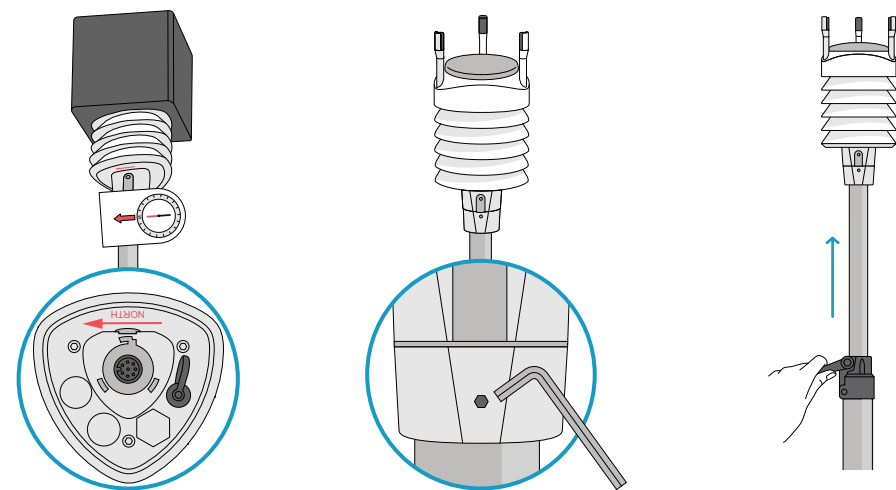


- 2.1 Place mounting kit to the top of vertical tripod mast.
- 2.2 Insert the mounting kit to the sensor and turn it firmly until you feel the adapter snap into the locked position.
- 2.3 Attach the telescopic mast to the tripod. Tighten the screws with fingers.



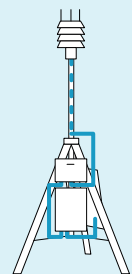
Check that the sensor is aligned to North.

Lead the sensor cable through the mast and connect the cable to the sensor.



- 2.4 Align the sensor so that the arrow points to North.
- 2.5 Tighten the fixing screw to keep the sensor firmly in place.  
Remove the protective cushion.
- 2.6 Open the lock and adjust the height of telescopic mast.

# 4 Connect cables and power up the station



Pull WXT cable through the mast.  
Tie cables to the tripod with cable ties.



Connecting power cable to gateway turns station automatically on if power is available from power source.

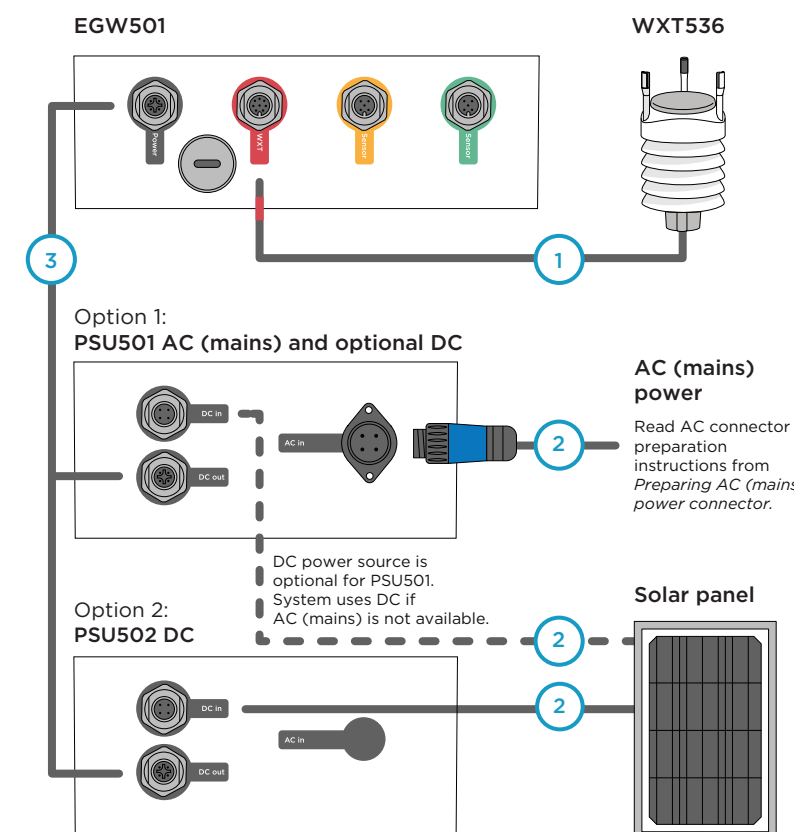
- 4.1 Connect WXT to gateway.
- 4.2 Connect power source to power unit as shown depending on your power unit.  
- Option 1: PSU501  
- Option 2: PSU502
- 4.3 Connect PSU to gateway.

## Powering specifications

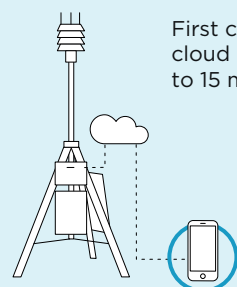
**EGW501:**  
Operating voltage:  
9 - 32 V DC  
2 A

**PSU501:**  
Input power:  
100 - 240 V AC  
50 - 60 Hz  
800 mA

**PSU502:**  
Input power:  
15 - 32 V DC  
Max. 2 A



# 5 Verify connection to cloud



First connection to cloud may take up to 15 minutes.

Powering status	LED	
Powering up...	•••••	Green blinking fast
Power OK	•••••	Green steady, after 60 minutes blinking slowly
Battery voltage low	•••••	Red blinking fast
Error	•••••	Red steady
Connection status	LED	
Connecting...	•••••	Green blinking fast
Connection OK	•••••	Green steady, after 60 minutes blinking slowly
Connection failed	•••••	Red steady

5.1 Check powering and connection from the front panel LED indicators.

5.2 Scan the QR code on the back of the gateway to access read-only view of the measurement data in Wx Beacon.

You can check the observations also from your account in [wxbeacon.vaisala.com](http://wxbeacon.vaisala.com)

## Safety note



### WARNING!

Alerts you to a serious hazard. If you do not read and follow instructions carefully at this point, there is a risk of injury or even death.



### CAUTION!

Warns you of a potential hazard. If you do not read and follow instructions carefully at this point, the product could be damaged or important data could be lost.



### NOTE

Highlights important information on using the product.



**WARNING!** Changes or modifications to this equipment not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.



**WARNING!** If the equipment is used in a manner not specified by Vaisala, the protection provided by the equipment may be impaired.



**WARNING!** Assess the risks from the installation work. Take into account also the effects of local weather conditions. Do not perform installation procedures when there is a risk of thunderstorm or lightning activity in the area.



**WARNING!** The AC (mains) supply line must be equipped with an overcurrent protection device (a fuse or a circuit breaker). The current rating of the overcurrent protection device must be aligned with the cable size used to connect the PSU501. Unless local regulations state otherwise, use a maximum of 6 A device for 0.75 mm<sup>2</sup> (AWG 18) cables, a maximum of 10 A device for 1 mm<sup>2</sup> (AWG 17) cables and a maximum of 16 A device for 1.5 mm<sup>2</sup> (AWG 15) cables. Do not replace the mains supply cord with a cord that has a lower rating than specified.



**WARNING!** Only licensed experts may install electrical components. They must adhere to local and state legislation and regulations.



**WARNING!** Keep away from live circuits. Operating personnel must observe safety regulations at all times.



**WARNING!** Do not replace the battery with a battery of an incorrect type. If you do, there is a risk of explosion. Dispose of used batteries according to statutory regulations.



**CAUTION!** EGW501 requires a separation distance of at least 20 cm (7.87 in). This distance must be maintained between the user and the device when the device is operating



To prevent electrostatic discharge, avoid touching component contacts or connectors.



When working with equipment in extremely cold temperatures, use appropriate personal protective equipment such as thermally insulated gloves and clothing.



Wear personal protective equipment (PPE).

Electrostatic Discharge (ESD) can damage electronic circuits. Vaisala products are adequately protected against ESD for their intended use. However, it is possible to damage the product by delivering electrostatic discharges when touching, removing, or inserting any objects in the equipment housing.

To avoid delivering high static voltages to the product, touch a conductive part of the equipment chassis with your other hand before touching ESD-sensitive components.



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