



Beacon Station BWS500



Vaisala Beacon Station BWS500 is a compact weather station for environmental monitoring. The complete solution provides measurements, data collection, and data visualization in one package. BWS500 includes Vaisala Beacon Edge Gateway EGW501, a multiparameter Vaisala Weather Transmitter WXT536, powering equipment, and mounting accessories. To maximize ease-of-use, the station comes with a data plan and a variety of service packages to choose from.

Complete solution

BWS500, when combined with data management and visualization software, includes the required hardware and software for managing your weather data. You can select to use Vaisala Wx Beacon for measurement data visualization.

BWS500 is suitable for a variety of applications, and can be scaled to support both small and large-scale weather observation networks – from harbor and port weather to complementing national weather forecast networks.

Sensor for various measurement needs

BWS500 is equipped with the proven Vaisala measurement sensor Vaisala Weather Transmitter WXT536 that measures 6 of the most important weather parameters: air pressure, temperature, humidity, rainfall, wind speed, and wind direction. Later, Vaisala extends the sensing capabilities of the station with more sensors.

Secure data connectivity

BWS500 takes care of the measurements, as well as data storage and transfer with Vaisala Beacon Edge Gateway EGW501. EGW501 provides secure data transfer between the sensor and a Vaisala cloud. The integrated SIM card and cellular data plan make the station ready for use as soon as it is installed.

Powering with AC (mains) or solar panel

For powering the station, an environmentally friendly solar panel with a high-capacity battery is available. The solar panel in conjunction with low power consumption make BWS500 an ideal choice for data applications in remote locations.

Alternatively, you can choose a power supply unit for running the station on AC (mains) power.

Plug and play

A range of options for mast, tripod, and wall mounting are available for the station hardware, enabling optimal installation regardless of the location.

BWS500 is easy to install and requires minimal configuration. Simply install and connect the devices, and start gathering data.

Data sharing and management

The Vaisala Wx Beacon software collects and visualizes measurement data from the station. Once you have an account in Vaisala Wx Beacon, share the data to third-party services and systems through an open API.

Features

- Compact end-to-end solution for various weather observation applications
- Accurate, high-quality data with proven Vaisala Weather Transmitter WXT536
- Solar panel powering for installations at remote locations
- Secure software platform and data communications
- Remote monitoring service for carefree operation
- Data visualization with Wx Beacon and open API for third-party integrations

Technical data

Operating environment

Operating temperature	-40 ... +55 °C (-40 ... +131 °F)
Storage temperature	-40 ... +70 °C (-40 ... +158 °F)
Operating humidity	0 ... 100 %RH

Measurement parameters

With multiparameter weather transmitter WXT536

Barometric pressure
Air temperature
Relative humidity
Wind speed
Wind direction
Rainfall

Radio module

Acceptance	CE (Europe), FCC (USA), IC (Canada)
SIM card type	Mini-SIM
Frequency bands	
LTE-FDD	B1/ B2/ B3/ B4/ B5/ B7/ B8/ B12/ B13/ B18/ B19/ B20/ B25/ B26/ B28
LTE-TDD	B38/ B39/ B40/ B41
WCDMA	B1/ B2/ B4/ B5/ B6/ B8/ B19
GSM	B2/ B3/ B5/ B8

Powering

Powering options	<ul style="list-style-type: none">Battery unit for AC (mains) power or solar panel useDC input without battery unit
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AC (mains) power	100 - 240 VAC 50 - 60 Hz 800 mA
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AC (mains) fuse, internal (non-replaceable)	T 3.15
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AC (mains) cable connection	<ul style="list-style-type: none">Conductor cross section (flexible): 0.75 ... 2.5 mm² (AWG 20 ... 14)Cable lead-through: for 6 ... 12.5 mm (0.24 ... 0.49 in) cable
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External DC	15 ... 32 VDC Max. 2 A
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Solar panel ¹⁾	20 W for Vaisala provided solar panel Input <ul style="list-style-type: none">Absolute maximum: 0 ... 32 VDCOperating: 15 ... 32 VDCMaximum 6 A
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Battery	Lead acid battery
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Battery capacity	12 VDC 7 Ah
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Power consumption

EGW	<1 W, typical
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PSU501	30 W, maximum
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PSU502	40 W, maximum
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¹⁾ Solar panel feasibility and operation depends on the installation location and the amount of sunshine.

Sensor options

Vaisala Weather Transmitter WXT536, heated ¹⁾

Vaisala Weather Transmitter WXT536, non-heated ¹⁾

¹⁾ WXT536 comes with mounting adapter, cable, and bird kit.

Communication options

Wireless communication 4G LTE / 3G / 2G

Maintenance communication USB 3.0 Web UI (locally)

Data collection and visualization Vaisala Wx Beacon

Data interfaces

- Vaisala Wx Beacon open API
- Lightweight machine-to-machine (LwM2M) interface

Mounting options

Mast 4 m (13 ft 1 in) ¹⁾ DKP204

Mast 3 m (9 ft 10 in) ¹⁾ DKP203

Mast 2 m (6 ft 7 in) ¹⁾ DKP202

Tripod 3 m (9 ft 10 in) ²⁾ DKT504

Wall mounting kit for gateway ASM213843

Wall mounting kit for power supply units ASM213949

¹⁾ Installation to concrete foundation. Optional accessories: leveling/welding plate, tilt division flange, support guy wire set, and lightning protection kit.

²⁾ Tripod comes with a toolkit, including tools bag, hammer, and ground pegs.

Compliance

EU directives EMC, LVD, RoHS, RED

Compliance marks CE, UKCA, FCC, IC, RCM

EMC compatibility IEC / EN / BS EN 61326-1, industrial environment
CISPR 32 / EN 55032 / BS EN 55032, Class B
EN 301489-1
FCC 15B
ICES-3 (B)

Electrical safety IEC 61010-1

Cold IEC 60068-2-1

Dry heat IEC 60068-2-2

Vibration IEC 60068-2-6
IEC 60068-2-64

Change of temperature IEC 60068-2-14

Damp heat, cyclic IEC 60068-2-30

Rough handling IEC 60068-2-31

Damp heat IEC 60068-2-78

IP rating

WXT536 IP65, with mounting kit: IP66

EGW501 IP67

PSU501 for AC (mains) power IP65

PSU502 for DC power IP65

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