



## Power Supply Unit PSU501, Solar Panel 20 W SOL501/SOL502



### Features

- Weather resistant with durable polycarbonate enclosure
- Includes battery backup
- Autodiagnostic data available when used with Vaisala Beam Weather Station BWS500
- Easy to install
- Mast, tripod, and wall mounting options for power supply unit
- Mast and tripod mounting options for solar panel

Versatile powering solution with AC (mains) powering and DC powering with an optional solar panel is available for Vaisala Beam Weather Station BWS500. The mounting options are similarly versatile: you can choose from mast, tripod, and wall mounting.

### Versatile powering solution

Power Supply Unit PSU501 is the powering solution for Vaisala BWS500, designed to ensure uninterrupted power supply (UPS) to the station. PSU501 can be used at sites where AC (mains) power is available, and in cases where AC (mains) power is not available PSU501 can work together with an environmentally friendly solar panel SOL501/SOL502 or other DC power source.

PSU501 is suitable for both portable and fixed installations.

### PSU501 for AC (mains) and DC power

PSU501, when used with AC (mains) power, requires a licensed expert such as an electrician for installation. The PSU501 enclosure contains a backup battery to ensure operation during power failure or outage.

When used with BWS500, PSU501 provides autodiagnostic data, such as battery level information.

### Solar Panel 20 W

Vaisala Solar Panel comes in 2 variants to allow mounting on a mast (SOL502) or tripod (SOL501).

The use of the solar panel can be considered in locations with sufficient amount of sunlight.

To ensure sufficient power supply, solar power can be used when the BWS500 configuration includes only a non-heated version of WXT530 Series sensor (not heated WXT530 Series sensor or other sensors).

# Technical data

## Powering options

Vaisala power supply unit for AC (mains) and DC power	PSU501
Vaisala solar panel 20 W for tripod mounting <sup>1)</sup>	SOL501
Vaisala solar panel 20 W for pole masts Ø 60–200 mm (2.36–7.87 in) <sup>2)</sup>	SOL502

1) Includes mounting brackets, cable, and accessories. Power supply unit not included.

2) Includes solar panel holder, mounting brackets, steel band, cable, and accessories. Power supply unit not included.

## PSU501 mounting options and accessories

Mast mounting kit for pole masts Ø 60–200 mm (2.36–7.87 in), includes mounting brackets, steel band, accessories, and 5-mm Allen key	ASM213841
Tripod mounting kit, includes mounting brackets and accessories	ASM213954
Wall mounting kit, includes mounting plate, screws, and wall plugs	ASM213949
Cable, PSU501 to gateway <sup>1)</sup>	–
AC (mains) power connector <sup>1)</sup>	–

1) Delivered with each power supply unit.

## PSU501 operating environment

Operating environment	Outdoor use
Use in wet location	Yes
Operating temperature	–40 ... +55 °C (–40 ... +131 °F) <sup>1)</sup>
Operating humidity	0–100 %RH
Pollution degree	2
Maximum operating altitude	2000 m (approx. 6500 ft)
IP rating	IP65

1) The capacity of the backup battery degrades in cold temperatures.

## PSU501 compliance

EU directives and regulations	EMC, LVD, RoHS
Electromagnetic compatibility (EMC)	EN 61326-1, industrial environment CISPR 32 / EN 55032, Class B FCC part 15 B, Class B
Electrical safety	EN 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
Corrosion and salt mist	VDA 621-415
Freezing rain	NWS 8.0
Compliance marks	CE, FCC, RCM, UKCA

## PSU501 powering

Input power (AC)	100–240 V AC, ±10 % 50/60 Hz 800 mA
Input power (DC) <sup>1) 2)</sup>	15–32 V DC Max. 2 A
Nominal output voltage	AC input connected: 24 V AC input not connected and in backup battery mode: 12 V <sup>3)</sup>
DC output current	Max. 1.2 A
AC (mains) fuse, internal (non-replaceable)	Type 3, 1.5 kV / 3 kA
AC (mains) cable connection	<ul style="list-style-type: none"> <li>Conductor cross-section (flexible): 0.75–2.5 mm<sup>2</sup> (20–14 AWG)</li> <li>Cable lead-through: for 6–12.5 mm (0.24–0.49 in) cable</li> </ul>
Overvoltage category	CAT II
Battery type <sup>4)</sup>	Valve-regulated lead-acid (VRLA) battery
Nominal battery capacity	12 V DC, 7 Ah
Expected battery lifetime	3–5 years
Battery dimensions (H × W × L)	Approx. 97.5 × 65 × 151 mm (3.84 × 2.56 × 5.94 in)

1) In PSU501, a solar panel or another external DC power supply is connected to **DC in**. EGW501 of Vaisala Beam Weather Station BWS500 is connected to **DC out**.

2) DC power supply must have reinforced insulation between the AC (mains) power and output.

3) The actual output voltage equals the DC input voltage (max. 32 V).

4) Vaisala recommends, for example, YUASA NP7-12.

## PSU501 mechanical specifications

Dimensions (H × W × L)	245 × 164 × 101 mm (9.63 × 6.46 × 3.98 in)
Weight	4 kg (8.82 lb)
Material, enclosure	Polycarbonate
Mating connectors	<ul style="list-style-type: none"> <li><b>DC in:</b> M12 A-coded 4-pin female</li> <li><b>DC out:</b> M12 A-coded 4-pin male</li> <li><b>AC in:</b> 4-pin female circular connector</li> </ul>

## SOL501/SOL502 specifications

Operating environment	Outdoor use
Use in wet location	Yes
Nominal voltage	12 V DC
Maximum power	20 W
Voltage at maximum power (V <sub>mpp</sub> )	18.5 V (typical)
Current at maximum power (I <sub>mp</sub> )	1.09 A (typical)
Open-circuit voltage	22.6 V
Short-circuit current (I <sub>sc</sub> )	1.19 A (typical)
Dimensions (H × W × D), without mounting frame	440 × 350 × 50 mm (17.32 × 13.78 × 1.95 in)
Dimensions (H × W × D), with mounting frame	378 × 350 × 320 mm (14.86 × 13.78 × 12.59 in)
Weight, including mounting frame	4.3 kg (9.5 lb)
Weight, including mounting frame and power supply unit	7.7 kg (17 lb)

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