



Power Supply Unit PSU501/PSU502, Solar Panel 20 W SOL501/SOL502



Features

- Power supply units with durable, polycarbonate enclosures
- Mast, tripod, and wall mounting options for power supply units
- Mast or tripod mounting options for solar panel
- Easy to install
- Power supply units with battery backup
- Autodiagnostic data available when power supply units used with BWS500

Versatile powering options with AC (mains) powering or DC powering with a solar panel are available for Vaisala Beacon Station BWS500. The mounting options are similarly versatile: you can choose from mast, tripod, and wall mounting.

Versatile powering options

The powering options are designed to ensure uninterrupted power supply (UPS) at the site for Vaisala Beacon Station BWS500.

For those looking for a portable solution, the obvious choice is the solar panel together with the power supply unit for DC power PSU502. In case AC (mains) power is available on site, the power supply unit for AC (mains) power, PSU501, can be used. You can also select to use PSU501 with the solar panel, in which case it functions as an AC/DC solution.

When used with BWS500, PSU501/PSU502 provide autodiagnostic data, such as battery level.

PSU501 for AC (mains) and DC power

PSU501 installation requires a licensed expert such as an electrician. The PSU501 enclosure contains a backup battery to ensure operation during power failure or outage.

PSU502 for DC power

PSU502 is for cases when AC (mains) power is unavailable. It is designed to be used together with Vaisala Solar Panel. The PSU502 enclosure contains a battery that the solar panel charges.

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 be considered in locations with a sufficient amount of sunlight.

To ensure sufficient power supply, the solar panel can be used only when the non-heated Vaisala Weather Transmitter WXT536 is selected for BWS500 configuration.

Technical data

Powering options

Vaisala Solar Panel 20 W ¹⁾	SOL501/SOL502
Vaisala power supply unit for AC (mains) and DC power	PSU501
Vaisala power supply unit for DC power ²⁾	PSU502

- 1) Power supply unit not included.
2) Use with Vaisala Solar Panel 20 W or standalone with your own external DC power.

PSU501 specifications

Operating environment

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

Powering

Input power (AC)	100 ... 240 V AC, ±10 % 50 ... 60 Hz 800 mA
Input power (DC)	15 ... 32 V DC Max. 2 A
Nominal output voltage, AC input connected	24 V In backup (battery) mode: 12 V
Nominal output voltage, AC input not connected	12 V ²⁾
AC (mains) fuse, internal (nonreplaceable)	Type 3, 1.5 kV / 3kA
AC (mains) cable connection	<ul style="list-style-type: none"> Conductor cross section (flexible): 0.75 ... 2.5 mm² (20 ... 14 AWG) Cable lead-through: for 6 ... 12.5 mm (0.24 ... 0.49 in) cable

Overvoltage category	II
Battery type ³⁾	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)

Mechanical specifications

Dimensions (H × W × L)	244.5 × 164.2 × 101.0 mm (9.63 × 6.46 × 3.98 in)
Weight	4 kg (8.8 lb)
Material, enclosure	Polycarbonate
Mating connectors	<ul style="list-style-type: none"> DC in: M12 A-coded 4-pin female DC out: M12 A-coded 4-pin male AC in: 4-pin female circular connector

- 1) The capacity of the backup battery degrades in cold temperatures.
2) The actual output voltage equals the DC input voltage (max. 32 V).
3) Vaisala recommends, for example, YUASA NP7-12.

PSU502 specifications

Operating environment

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

Powering

Input power	15 ... 32 V DC Max. 2 A
Nominal output voltage	12 V ²⁾
Battery type ³⁾	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)

Mechanical specifications

Dimensions (H × W × L)	244.5 × 164.2 × 101.0 mm (9.63 × 6.46 × 3.98 in)
Weight	3.9 kg (8.6 lb)
Material, enclosure	Polycarbonate
Mating connectors	<ul style="list-style-type: none"> DC in: M12 A-coded 4-pin female DC out: M12 A-coded 4-pin male

- 1) The capacity of the backup battery degrades in cold temperatures.
2) The actual output voltage equals the DC input voltage (max. 32 V).
3) Vaisala recommends, for example, YUASA NP7-12.

PSU501 and PSU502 compliance

EU directives	EMC, LVD, RoHS
EMC compatibility	EN 61326-1, industrial environment CISPR 32 / EN 55032, Class B FCC part 15, class B
Electrical safety	EN 61010-1 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
Compliance marks	CE, FCC, RCM, UKCA

- 1) Applies only to PSU501.

PSU501 and PSU502 mounting options

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/PSU502 to gateway ¹⁾	-
AC (mains) power connector ²⁾	-

- 1) Delivered with each power supply unit PSU501/PSU502.
2) Delivered with each power supply unit PSU501.

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 _{mpp}), typical	18.5 V
Current at maximum power (I _{mpp}), typical	1.09 A
Open-circuit voltage	22.6 V
Short-circuit current (I _{sc}), typical	1.19 A
Dimensions (H × W × D), without mounting frame	440 × 350 × 49.6 mm (17.32 × 13.78 × 1.95 in)
Dimensions (H × W × D), including mounting frame	377.5 × 350 × 319.7 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 PSU502	7.8 kg (17.2 lb)

Solar panel options

Solar panel for tripod mounting, includes mounting brackets, cable, and accessories	SOL501
Solar panel for pole masts Ø 60 ... 200 mm (2.36 ... 7.87 in), includes solar panel holder, mounting brackets, steel band, cable, and accessories	SOL502