



Soilmoisture

Biocrust-Wetness-Probe



Umweltanalytische
Produkte GmbH

Research work carried out in the last decades, showed that BSC fulfill a number of relevant ecosystem services, including stabilization of desert soils (Belnap & Gillette 1997; Eldrige and Leys 2003), facilitation of plant germination and growth (Godinez-Alvarez, Morín & Rivera-Aguilar 2012; Serpe et al, 2006), enhancement of the water holding capacity of the soil (Belnap 2006; Chamizo et al. 2013, Eldridge, Zaady & Shachak, 2000). In her recent work (BSCactivity: A new sensor to analyze the water content of biological soil crusts and surface soil) Bettina Weber et al. described a measurement principle that allows the measurement of precipitation equivalents in biological soil-crusts.

We are pleased to offer the following products developed for the measurement of the wetness of biocrusts:

Biocrust-Wetness-Probe (ArtNr. 10710):

- 3m cable with M8-connector (m) + 60cm twisted wire to measurement element and 60cm wire to soiltemperature-sensor (10k thermistor)
- the measurement-element consists of two goldplated contacts, 5,5mm long, two 30mm wires for keeping the sensor fixed in the soil-crusts
- each BWP-sensor comes with a 10k thermistor, 60cm cable, diameter 5mm, length 30mm
- Option: instead of a second thermistor it is possible to connect a PAR-Sensor (ArtNr. 10711)



Biocrust-Wetness-Box (ArtNr. 10720):

- 2 sensor-pairs connect to one electronic-box with two connectors (f) M8, 4-pin, in and one connector (m) M12, 8-pin, out (4 wires thermistor, 4 wires biocrust-wetness)
- 12V power-supply
- output 0-1,2V nom. - output will have to be calibrated to „precipitation equivalent“ after the field experiments





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General:

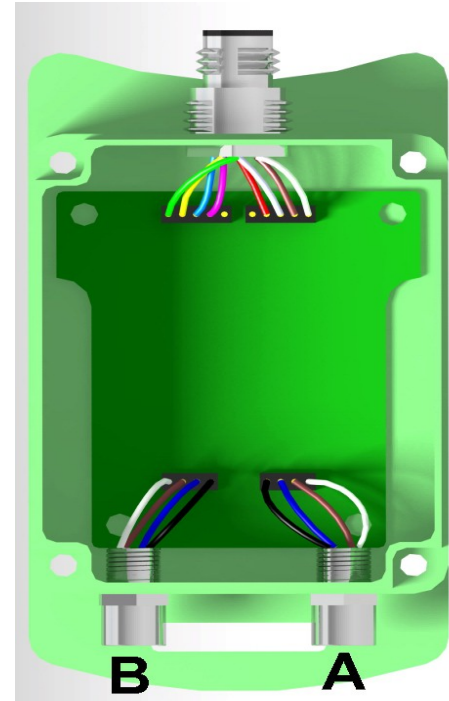
Every electronic box consists of two input-connectors that are configured in the following way:

- 2 pins for BWP-input
- 2 pins for a different sensor (no processing, directly linked to output) like thermistor or PAR-Sensor

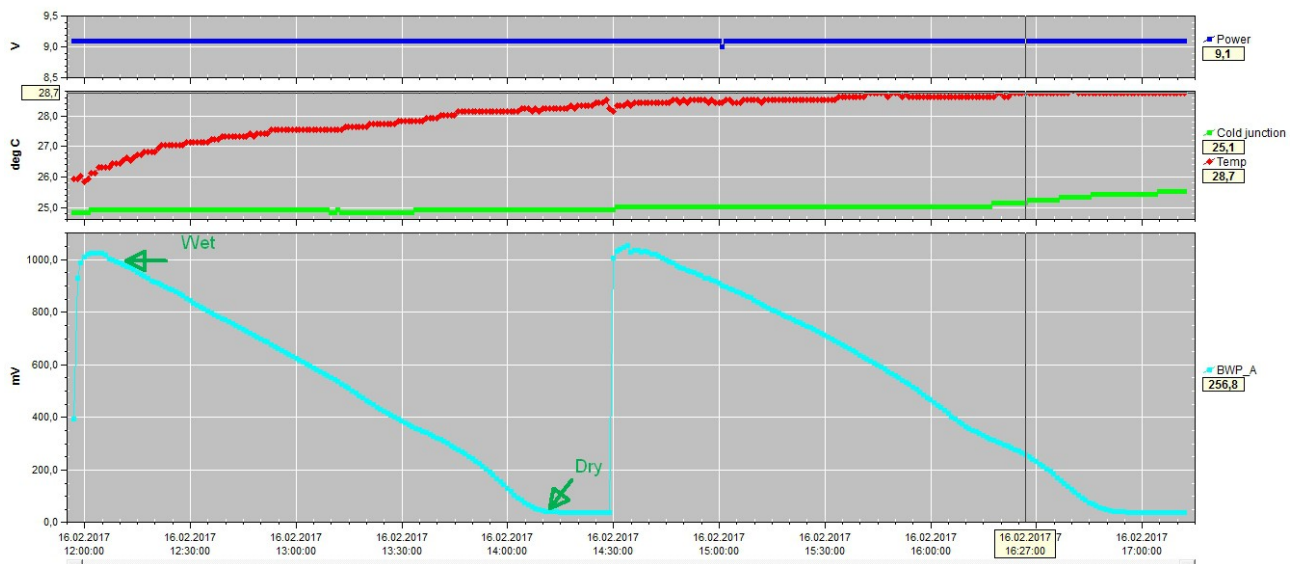
So the user is free to define which sensors are combined.

There are the following options:

- 2 BWP-sensors, each with a thermistor
- 2 BWP-sensors, one with thermistor, one with PAR
- 4 BWP-sensors (need an additional PCB inside!)



Example of a sensor-output during the drying and re-wetting process:



Product to come (2017): calibration apparatus for Biocrust-Wetness-Probes!