



Summary

Monitoring Soil Environment/Impact of Soil Improvement

The soil literally forms the foundation for the growth of trees and all other crops. The soil environment significantly determines soil and plant health. Soilmoisture, pH and oxygen availability determine whether for the plant favorable or harmful microorganisms can develop in the soil. The availability of most nutrient elements is also closely related to the soil environment.

SoilLife sensors provide real-time insights into the soil environment. This makes it possible to closely monitor the effect of soil improvement and other measures on the chemical and microbiological processes in the soil. Based on this information, actions can be taken to influence the soil environment, such as adjusting watering practices, aerating, adding nutrients, and pH adjustment, among others.

Optimize the soil environment!

Connectivity

Cellular LTE-M / NB-IoT

Modem works on all major global LTE-M and NB-IoT brands.

SIM card size

Internal Micro 3FF SIM card

Maintenance

Rechargeable battery

3500mAh LiPo

Battery life

~ 1 year

Casing

Dimensions	75mm in diameter and 160 mm in length
Weight (including sensors and battery)	~ 922 grams
Material	Polyvinyl chloride
IP-code	IP68
Temperature	-30 °C to +60 °C
Installation	Above ground level with solar panel or for public area's just below ground level LIFE_S_M above ground solar ready LIFE_R_M for below ground level

Location

Manual	Using software
GPS antennal	Internal

Security

Data security	Military-level AES-256 Encryption from device to Device Manager to protect the integrity and confidentiality of telematics data. Data forwarded to third-party systems is sent via HTTPS for end-to-end security.
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Sensors

pH
Oxygen index
Electrical conductivity (EC)
Soil moisture (Volumetric Water Content)
Soil temperature

pH sensor

Range	0 – 13
Resolution	± 0.1
Accuracy	± 0.1
Response time	95% in 4 seconds
Zero point	pH 7.00 (0 mV)
Temperature range	1 ° C to 60 ° C. There are also pH sensors available with a wider temperature range. Please contact us for this.
Maximum pressure	7 bar
Maximum depth	300 cm
Cable length	500 cm
Dimensions	17 mm diameter x 166 mm length
Weight	90 g
Materials	EPDM, Nylon, Polycarbonate, Glass, Polyvinyl Chloride, Polyethylene, Gold
Cleaning	The type of coating determines the cleaning technique. Soft coatings can be removed by stirring vigorously or by using a spray bottle. Organic chemicals or hard coatings must be removed chemically. Soaking for a few minutes in a light bleach solution or a 5 - 10% hydrochloric acid (HCl) solution often removes many coatings.
Time for recalibration	Annually
Lifespan	~ 1 years

Oxidation Reduction Potential sensor

Range	0 – 100 % (± 1100 mV)
Resolution	± 0.1 %
Accuracy	± 0.1 % between 0 – 100 %
Response time	95% in 4 seconds
Temperature range	1 ° C to 60 ° C. Oxygen index sensors are also available with a wider temperature range. Please contact us for this.
Maximum pressure	7 bar
Maximum depth	300 cm
Cable length	500 cm
Dimensions	17 mm diameter x 166 mm length
Weight	90 g
Materials	EPDM, Nylon, Polycarbonate, Glass, Polyvinyl Chloride, Polyethylene, Gold
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Time for recalibration	Annually
Lifespan	~ 1.5 years

Electrical conductivity (EC), soil moisture and soil temperature probe

Dimensions	9.4 cm x 2.4 cm x 7.5 cm (L x W x H)
Needle length	5.5 cm
Cable length	440 cm Please contact us if a non-standard cable length is required.
Temperature	-40 to 60 °C
Lifespan	> 3 years

Electrical conductivity (EC)

Range	0 to 20 dS/m
Resolution	0.001 dS/m
Accuracy	± 5% + 0.01 dS/m from 0 to 10 dS/m ± 8% from 10 to 20 dS/m

Soil moisture - Volumetric Water Content (VWC)

Range	Mineral soil calibration: 0.00–0.70 m ³ /m ³ Calibration of soilless media: 0.0–1.0 m ³ /m ³ Permittivity (ε): 1 (air) to 80 (water)
Resolution	0.001 m ³ /m ³
Accuracy	General calibration: ± 0.03 m ³ /m ³ (± 3.00% VWC) typical in mineral soils with a solution EC <8 dS/m. Medium specific calibration: ± 0.01 – 0.02 m ³ /m ³ (± 1-2% VWC) in any porous medium. Permittivity (ε): ± 1 ε from 1 to 40 15% of the reading from 40 to 80.

Soil temperature

Range	-40 to 60 °C
Resolution	0.1 °C
Accuracy	± 0.5 °C from -40 to 0 °C ± 0.3 °C from 0 to 60 °C

Guarantee

Factory guarantee	1 year if it can be demonstrated that it concerns a manufacturing defect. In case of improper use, repair costs will be charged.
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Contact

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