

Sensoterra

Matrix VII, Science Park 106
1098XG Amsterdam
The Netherlands



Single depth soil moisture probe

Technical data sheet

Version 1.4

General

Measurement	Soil moisture			
Probe lengths	15 cm	30 cm	60 cm	90 cm
Dimensions	20 x 8 x 8 cm	35 x 8 x 8 cm	65 x 8 x 8 cm	95 x 8 x 8 cm
Weight	0.21 kg	0.26 kg	0.35 kg	0.42 kg
Power	Non-replaceable internal Lithium Manganese Dioxide battery included			
Operating voltage	3.0 V			
Life expectancy	3-year using default reading rate			
Operating environment	- 20 to + 80 degrees Celsius			
Waterproof enclosure	Suitable for outdoor environments			
Warranty	1 year			
Installation requirements	By hand or rubber hammer			
Certification	LoRa Alliance FCC CE			

Soil moisture

Measurement protocol	Soil resistivity and capacitance
Measurement output	Volumetric Water Content (%), or Sensoterra Index Scale
Measurement volume	6.2 cm ³
Default reading rate	One measurement per hour
Memory	Last 6 measurements
Resolution	Reported to the nearest 0.1 %
Range	0 to the maximum water capacity of the soil by total volume - 53% for clay, 40% for sand and 83% for peat
Accuracy	±20% relative accuracy at pF>=2
Operating environment	Up to EC of 0.5 mS/cm
Soil compatibility	Factory calibrated for 5 common soil types, as well as a generic soil. Custom specified calibration on request

Communication

Wireless protocol	LoRaWAN 1.0.2
Frequency	North America: 902-928 MHz Europe: 863-870 MHz Australia: 915-928 MHz
Transmit power	North America and Australia: up to 20 dBm Other regions: up to 14 dBm
Transmission rate options	Between 4 - 24 uploads per day
Data interface	Web browser, iOS or Android
Data storage	Sensoterra database
Export data	<ul style="list-style-type: none"> - Excel download - Open RESTful API - SenML server push notifications - GeoRSS feed
LoRaWAN provisioning	3 years included
Security	<ul style="list-style-type: none"> - LoRa communication encrypted with AES 128 up to the network servers - All API and application access encrypted with TLS/SSL - Hosting access secured by industry best practices like TFA, etc

Date	Revision	Author	Summary of changes
2019-3-14	1.4	CF	Normal use description, accuracy, transmission options
2019-2-4	1.3	TW	Added certification new address
2018-1-4	1.2	MR	Added security
2017-11-17	1.1	RB	Added Australian frequency
2017-6-9	1.0	RB	Initial version