



GAIN A DEEPER VIEW

Technical Specifications

Specifications subject to change without notice

For additional information, please contact the Soil Scout team at info@soilscout.com

HYDRA100 Scout

Radio power	27.0 dBm (500 mW). Bandwidth <250 kHz.		
Frequency Variants	869.525 MHz (ITU-1) Europe & selected other markets 921.700 MHz (ITU-2) Americas, Australia, NZ & selected other markets 920-925 MHz (FHSS) Hong Kong Custom Information upon request		
Battery capacity	3000 mAh, encapsulated primary lithium		
Life expectancy	Up to 20 years @ 1 cycle per 20 minutes		
Encapsulation	Black polyurethane molding		
Dimensions (L x W x H)	129 x 59 x 25 mm (5.1" x 2.3" x 1.0")		
Sensors	Temperature 3-prong integrated Capacitive (moisture content) & Resistive (EC / salinity)		
Moisture Accuracy	± 2 % mean error (1 % with correct soil type, 1 % installation repeatability)		
EC Accuracy	± 0.2 dS/m mean error, Typical resolution 0.1 dS/m, Range 0 to 20 dS/m		
Dielectric Accuracy	± 2 % mean error, Resolution 0.5 to 1.5 ε, Range 1 to 135 ε		
Temperature Accuracy	Range -40 to +80 °C / -40 to 176 °F Accuracy: +/- 0.1 °C / 0.18 °F		
Resolution	-40 to -11 °C	1.00 °C	-40 to 12 °F
	-10 to +10 °C	70.25 °C	-12 to +50 °F
	+10.5 to +80 °C	0.50 °C	+51 to +176 °F

Base Station

Receiver RF sensitivity	-100 dBm, BNC connector
Frequency Variants	Same as HYDRA100 Scout
Operating Voltage	8-14 VDC, 300 mA
Dimensions (L x W x H)	180 x 130 x 100 mm (7.1" x 5.1" x 3.9") ¹⁾
Data interface	4G modem / Custom ²⁾
Power Supply	100-240 VAC with 5 m (16'4") lead (included)

Wide selection of Omni-directional / Directional antennas are compatible

1) Excluding mounting tabs + external interface ports

2) 4G modem is a third-party component. Network specific SIM-card not supplied. Not eSIM compatible. 4G modem is a third-party component. Network specific SIM-card not supplied. Not eSIM compatible.

ECHO Repeater

Receiver RF sensitivity	-100 dBm, BNC connector
Frequency Variants	Same as HYDRA100 Scout
Radio transmit power	27 dBm (500 mW) Bandwidth <250 kHz.
Power Supply	Solar panel charging a 2400 mAh 3,7V Li-ion battery. Mains power supply available as accessory (same as used for Base Station) Optional Repeater variant to enable connection to heavy battery
Range	10 km / 6-mile line-of-sight from ECHO to Base Station / another ECHO ³⁾
Dimensions (W x H x D)	190 x 135 x 95 mm (7.5" x 5.3" x 3.7")
Mounting	50 mm (2") pole mount / wall mount

3) Any obstacles (vegetation, hills, buildings) between the radios will decrease range. Base Stations & Repeaters dynamically mesh.



Soil Scout Monitoring Service

Connectivity	Web based HTTPS browser interface
Preferred browsers	Chrome, Firefox, Safari
API	Push-type RESTful JSON API , activated by demand ⁴⁾
User Functionalities	User/Site/Preference management Hardware device management Real-time data view, History Graph view, Map view System alarms, Device grouping, Email notifications Historical data comparison tool Data download in CSV format
Server	Hosted Linux server, PostgreSQL database, Apache2 HTTPS server
Security	HTTPS protocol, user-specifically isolated data access
Backup	Obtained measurement data is never deleted Hosted server complete backup daily, stored for 30 days

4) API written to meet Cumulocity structure, for more information please obtain the API Summary document.