

SMART FARM SENSING



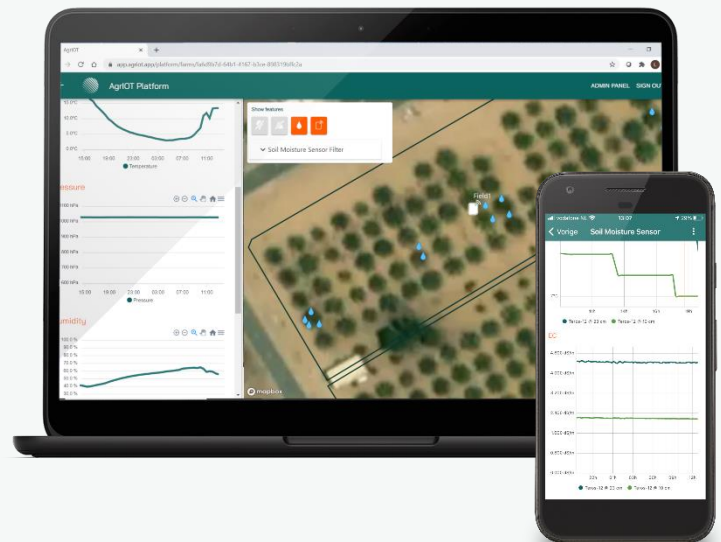
ADVANCED SOIL MOISTURE SENSING

Real-time soil monitoring

Maintaining ideal soil moisture conditions lowers the risk of failed crops and increases crop productivity. Continuous monitoring of soil moisture, electric conductivity and temperature at root depth using ultra-reliable TEROS-11/12 sensors (up to 6 connected to one device) is the ideal way to optimise soil conditions specific to each crop. The wireless datalogger has built-in barometer providing on-the-spot temperature and air pressure data to complete your solution.

AgriOT ready

Seamless integration with AgriOT <https://agriot.app/>, our geospatial agriculture data management platform, through wireless communication to AgriOT platform, allowing full field monitoring from iPhone, Android phone or desktop.



TECHNICAL SPECIFICATIONS

Sensor Specifications

Volumetric water content (VWC)

Range	Mineral soil calibration: 0.00 – 0.70 m ³ /m ³ Soilless media calibration: 0.0 – 1.0 m ³ /m ³ Apparent dielectric permittivity (ϵ_a): 1 (air) to 80 (water) <i>NOTE: The VWC range is dependent on the media the sensor is calibrated to. A custom calibration will accommodate the necessary ranges for most substrates.</i>
Resolution	0.001 m ³ /m ³
Accuracy	Generic calibration: ± 0.03 m ³ /m ³ ($\pm 3.00\%$ VWC) typical in mineral soils that have solution EC <8 dS/m Medium specific calibration: ± 0.01 – 0.02 m ³ /m ³ (± 1 –2% VWC) in any porous medium Apparent dielectric permittivity (ϵ_a): 1 – 40 (soil range), ± 1 ϵ_a (unitless) 40 – 80, 15% of measurement

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

Bulk electrical conductivity (EC) - TEROS-12 only

Range	0 to 20 dS/m (bulk)
Resolution	0.001 dS/m
Accuracy	+/- (5% +0.01 dS/m) from 0 to 10 dS/m +/- 8% from 10 to 20 dS/m

Physical dimensions

Dimensions	9.4 x 2.4 x 7.5 cm (L x W x H)
Needle length	5.5 cm
Cable length	5 m (standard) 50 m (maximum custom cable length) <i>NOTE: Contact support if a nonstandard cable length is needed.</i>

Datalogger Specifications

No. of sensors	Plug and play with TEROS-11/12 sensors, up to 6 sensor ports Integrated GPS and barometric pressure measurement
Data delivery	Cloud-based data delivery, including cellular and data hosting service 3G: UMTS 3G 5-band cellular module with 2G fallback 4G: LTE-M and NB-IoT cellular
Power supply	Built-in solar panel for extended deployments, rechargeable nickel-metal hydride (NiMH) batteries
Dimensions	Length: 14.9 cm (5.9 in) Width: 6.3 cm (2.5 in) Height: 25.0 cm (9.9 in)
Data security	Stores 40,000 to 80,000+ records, depending on sensor configuration Transmitted data is backed up in the data logger memory to give you extra data protection
Configuration	Simple setup, firmware-over-the-air updates

SMART FARM SENSING

Smart Farm Sensing provides products, services and solutions to the agriculture sector based on intelligent sensor data, remote sensing and geospatial information.

Our vision is to increase global agriculture productivity and sustain our future food chain with fully operational satellite, aerial and ground remote sensing data supply chains.

