



aranet

Soil sensor

WET150



Soil sensor WET150 is designed to ensure plants receive the correct amount of water and nutrients by monitoring volumetric water content (WVC), substrate temperature (T), and electrical conductivity (ECb and ECp).

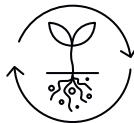
Features:



Track
volumetric
water content



Monitor
temperature in
the substrate



Balance
nutrient
levels



Wireless
sensor



Battery life
up to 8 years

The Soil sensor WET150 measures three crucial variables that influence plant growth: moisture content, temperature, and electrical conductivity (EC), which is a strong indicator of the general nutrient level in the substrate.

While bulk electrical conductivity (ECb) provides insights into nutrient levels in the substrate, pore electrical conductivity (ECp) is important for reliably representing the nutrient levels of the water available to the plant.

In the Aranet platform, users can choose from various substrate types on a proposed list. A list that has been acknowledged by industry practice and extensive research in Aranet substrate laboratory

To ensure consistent data collection throughout the plant growth cycle, use WET150 installation accessories. These accessories enable precise sensor installation every time!

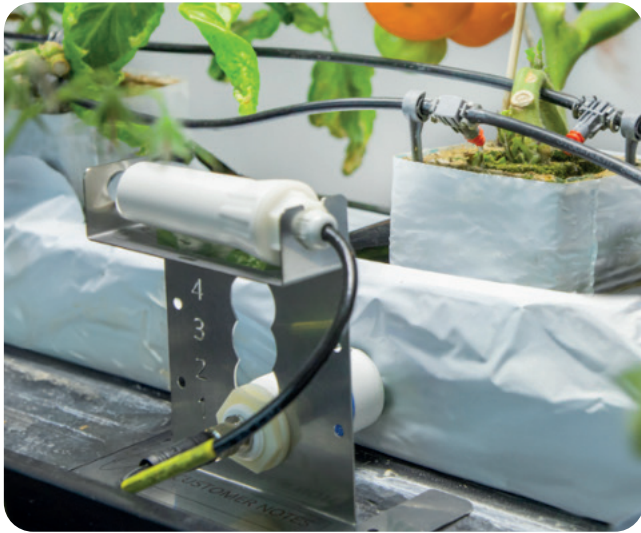


Figure 1 Installation accessory for tabletop systems
– Sensor Installation Bracket



Figure 2 Installation accessory
for systems with gutter.

Use cases:

This sensor is essential for greenhouse operators aiming to optimize irrigation practices, ensuring that plants receive the right amount of water at the right time. By continuously monitoring these critical parameters, the Soil sensor WET150 helps prevent overwatering or underwatering, which can lead to plant stress and reduced yields. Additionally, it supports the maintenance of ideal growing conditions, contributing to healthier plants and more efficient resource use, ultimately enhancing the productivity and sustainability of greenhouse operations.

Plants that are grown in artificial substrates routinely receive their nutrients in irrigation water – in the process known as “fertigation”. Nutrient levels can be controlled by monitoring the water content and conductivity (EC) and adjusting the injection of liquid fertilizer into the irrigation water. The sensor excels in accurately measuring this crucial information.

When irrigation water is recycled or abstracted from rivers with high levels of dissolved salts, over time there can be a buildup of soil salinity. Soil salinization will eventually reduce crop yields. The WET150 sensor is a powerful tool for sampling soil salinity, ensuring that growers and farmers have the essential information they need to take remedial action as quickly as possible.

To recognize irrigation patterns and resulting biomass increase utilize Soil sensor in combination with Drainage sensor and Weight sensor. Analyze data in Aranet Cloud platform to optimize root zone conditions for healthy plant growth.



Good practice recommendations:

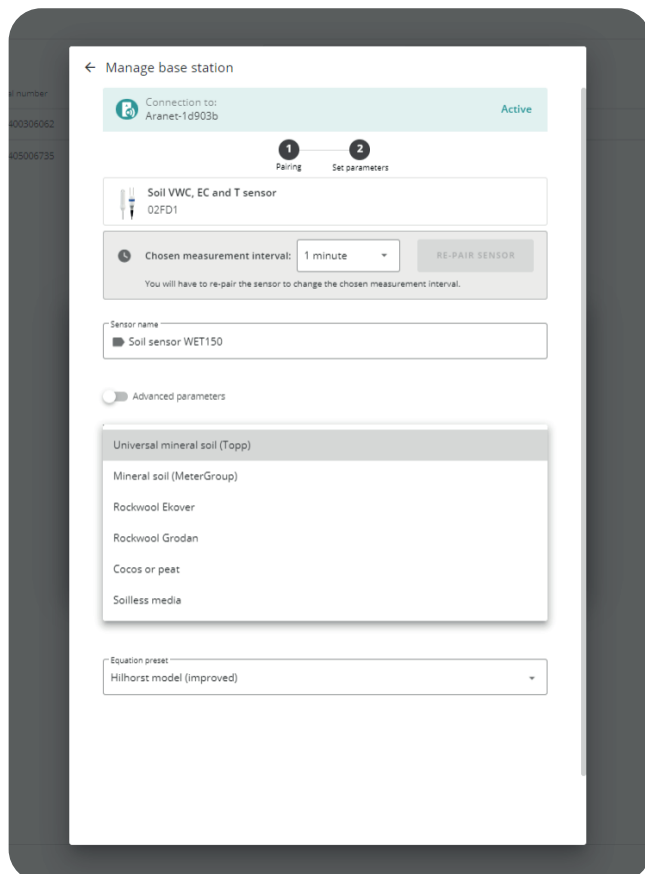
For accurate and reliable sensor measurements, proper installation is crucial. Choose a location for the sensor that reflects the typical plant growth conditions in your facility.

Insert the sensor prongs horizontally and fully into the substrate. Install several sensors at the same height and locations across the substrates to ensure consistent and comparable data. Use Aranet Soil sensor accessories for precise sensor installation.

Avoid placing the sensor directly next to irrigation fixtures. Do not reinstall the sensor in the same holes, as this creates air gaps between the substrate and sensor prongs.



Using a specific profile for a particular substrate enhances data accuracy because substrates vary in densities and water-absorbing materials. The Aranet ecosystem provides a list of calibration profiles. To make changes in the calibration profile navigate to the **base station management feature** in the Aranet Cloud interface. Click on “Manage & Pair Sensors,” select your Soil sensor WET150. Select the calibration of the VWC (volumetric water content) and EC (pore water electrical conductivity) calculation method from the lists. If you do not know the specific substrate you use, Universal Mineral Soil (Topp) is recommended as the default profile.



The large water content in plants and fruits is the primary factor contributing to the weakening of the radio signal if sensors or the base station are positioned too low. The sensor has an extended wire to a transmitter - position the transmitter approximately 30 centimeters or one foot above the expected maximum height of the plants.

