



QUICK GUIDE



WHAT IS VISUAL SENSOR?

VISUAL Sensor is a sensor management system that allows the most important agronomy, ic and environmental parameters to be monitores in real time and from any divide, in order to optimise production, quality and environmental sustainability, and reduce both water and economic sources.

Thanks to new technologies in the internet of things, the farmer or field technician can know at all times the amount of water present in the land of his cultivation, salinity, soil temperature, soil matrix tension, relative humidity, ambient temperature, atmospheric pressure, etc.

The VISUAL Sensor system is completely self-contained and maintenance free. You do not need an electrical connection, programmer, internet access or infrastructure.

Installing a sensor does not require more than 5 minutes. They are fully self-installing. You just have to place the sensor, connect it and register it in the APP. You can easily change the location of the monitoring point according to your needs, time of the year, etc.

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Elements

VISUAL Sensor have 3 elements:

- VISUAL Box
- Soil sensor
- Environmental sensor



Our APP complete the pack of elements that conform VISUAL Sensor.



VISUAL Box technical characteristics



Properties: Protection: IP67 (waterproof) and anti UV. Connection: Push-Pull (waterproof) Data sending frequency: 1 hour or 20 minutes Ability to connect up to 3 sensors Autonomy: Up to 3 years Battery: 4AA Coverage throughout the national territory.

What is VISUAL Box?

VISUAL Box is a transmission module that allows the sending of data obtained from the sensors to the VISUAL SENSOR application (in the cloud).

Thanks to the latest technology in IoT (internet of things), VISUAL Box sends all the information directly to the internet without the need for any kind of intermediary device. This makes it possible to deploy a network of sensors with total independence from a concentrate, being able to control as many farms as necessary.

It is a totally autonomous system, it does not need an electrical connection, a programmer or maintenance.

The VISUAL Box module has no buttons, as it starts working when it detects a connected sensor and hibernates when it is removed.

The protocol consists of taking a measurement of each of the sensors and sending a shipment on an hourly basis (or every 20) minutes). So your battery can last up to 3 years using just 4 AA batteries, which can be easily replaced. The VISUAL Box performs periodic measurements every hour and transmits the information to the cloud, where it will be available in real time and on any device that has an internet connection.





Soil sensor technical characteristics

Measurements:

<u>Volumetric water content (%)</u> or (m3 / m3) (Range 0-100% and resolution 0.03%) <u>Electrical conductivity (dS / m)</u> or (ms / cm) (Range 0-20 dS / m and resolution 0.01 dS / m) <u>Temperature (°C) (Range -40 / 80°C and resolution 0.1 °C)</u>

Cable length: 2m Connection: Push-Pull (waterproof) Communication: RS485 Polyurethane resin and stainless steel rods Dimensions: 45x15x145 mm. (70 mm. Electrodes)

Installation:

Drill a hole in the ground to the desired depth and insert the sensor into the ground. Refill with the extracted earth while compacting avoiding air pockets and stones. Connect the sensor to the link.





What is a soil sensor?

The ground sensor is an instrument for measuring the most important soil parameters. This industrial quality device is designed to withstand the harsh conditions of the field: agricultural work, inclement weather and physical-chemical and biological wear. Its rods are made of stainless steel and the electronics are covered by a very resistant and inert polyurethane sheath.

Water only when necessary. The sensor monitors water stress and / or volumetric water content in the soil.

The measured values are the most demanded by agricultural professionals: volumetric water content (humidity), electrical conductivity (salinity) and soil temperature.

Using FDR technology, the sensor sends an injection of current to the ground and measures the dialectical permissiveness of a volume of land around the sensor itself. This allows obtaining information in orders of accuracy much higher than the rest of agricultural sensors.





Environment sensor technical characteristics

Measurements:

<u>Ambient temperature (°C) (Range -40 / 85°C and resolution 0.5%)</u> <u>Atmospheric pressure (hPa) (Range 300/1100 hPa and resolution 1 hPa)</u> <u>Relative humidity (%) (Range 0/100% and resolution 1%)</u>

Connection: Push-Pull (waterproof) Communication: RS485 Dimensions: 135x15 mm diameter. Solar shield: 2m cable.





What is environmental sensor?

The ambient sensor is a set of industrial quality climate sensors, which measures the environmental values most demanded by agricultural professionals: ambient temperature (°C), atmospheric pressure (hPa) and relative humidity (%).

Through these data, other climatic values can be obtained such as the calculation of the evotranspiration of a crop, the dew point, etc.

The VISUAL AMBIENTE sensors come in a small housing with a solar shield that connects directly.



Real case installation







www.visual-iot.es/visualbox-gettingstartedeng

VISUAL SENSOR is a comprehensive water cycle management tool, from the billing point to the point of compsumption. This product responds to the agriculture needs in 4.0. Industry where information is the driving force behind the processes.

This manual is the VISUAL SENSOR simplest manual we have. Please, for further information about every single component of the VISUAL Sensor (VISUAL Box, Soil sensor, Environmental sensor) you can check the other manuals available in our website:

Support - Do you have any questions or concerns?

We test, install, calibrate and repair each sensor where you need it. Our technicians use the instruments every day. No matter what the question is, there is always someone available.

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