

Description

Advanced measurement system for open-field vegetable crops, designed to work wirelessly and autonomously thanks to its rechargeable battery and solar panel. It provides complete crop monitoring with high-precision sensors to optimise irrigation, yield and plant health. It consists of: Ikos Controller, two 30 cm Ikos Tensiometer (installed at 15 and 30 cm), Ikos Multisensor and Ikos DPV externo.

Features

- Multiple communications module (UNB or GPRS) for efficient connectivity.
- Several sensors can be connected to each device, for complete crop monitoring.
- Powered by a rechargeable battery and solar panel, for continuous and sustainable operation.
- Easy to install and move, suitable for different crops and layouts.

What the package includes

NO.	PART	QTY	MATERIAL
1	Ikos Controller	1	Grey ABS housing, IP65; electronic board; Li-ion battery; solar panel
2	Ikos Tensiometer 30 cm (shallow)	1	ABS body and head (Terluran® GP-35); transparent PVC tube; porous ceramic tip
3	Ikos Tensiometer 30 cm (deep)	1	ABS body and head (Terluran® GP-35); transparent PVC tube; porous ceramic tip
4	Ikos Multisensor	1	ABS encapsulation, IP68; steel rods
5	Ikos DPV externo	1	Anti-radiation ABS probe BGT-BYX; painted metal bracket
6	Installation kit · Controller bracket	1	ABS
7	Installation kit · Antenna	1	
8	Installation kit · Dripper anchor stakes	2	Plastic (PVC)
9	Installation kit · Cable ties	9	Nylon

Technical specifications



Ikos Controller

Power supply	Li-ion battery 3.7 V, 5000 mAh
Solar panel	Pmp 3.5 W · Vmp 6.6 V
Microprocessor	ARM Cortex-M0+ 32 bit
Communications	Dual Ultra-Narrow Band (UNB) or GPRS
Output signal	3 analogue inputs, 1 RS485 input, 1 I2C
Number of sensor inputs	5
Connectors	4 × 4-pin M12
Dimensions	161 × 161 × 80 mm
Weight	600 g
Button	ON-OFF with LED switch
Accessory	Mounting anchor (bracket)
Material	Grey ABS housing, IP65; electronic board; Li-ion battery; solar panel



Ikos Tensiometer × 2

Length	30 cm (two units)
Measurement	0 – 1000 mbar
Power supply	5 V
Accuracy	0.5 %
Overload pressure	150 % FS
Temperature compensation range	–10 ~ 70 °C
Operating temperature range	30 °C ~ +70 °C
Zero temperature coefficient	0.3 % FS/10 °C
Material	ABS body and head (Terluran® GP-35); transparent PVC tube; porous ceramic tip

Installation depth: 15 cm (shallow) and 30 cm (deep).



Ikos Multisensor

Moisture range	0 – 100 %
Temperature range	–30 ~ +70 °C
Conductivity range	0 – 20 mS/cm
Output signal	RS485
Response time	< 1 s
Power supply	5 V
Effective measuring area	Ø 70 mm × 70 mm high
Operating temperature	–40 ~ +80 °C
Protection	IP68
Storage	10 – 60 °C · 20 – 90 % RH
Material	ABS encapsulation, IP68; steel rods

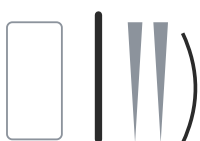
Channel 5 (RS485).



Ikos DPV externo

Voltage	5 V
Output signal	I2C
Working range	Temperature –40 ~ +85 °C · Humidity 0 – 100 % · Pressure 300 – 1100 hPa
Resolution	VPD 0 – 10 kPa · Temperature 0.01 °C · Humidity 0.008 %
Accuracy	Pressure 0.18 Pa · Temperature ±1 °C · Humidity ±3 %
Material	Anti-radiation ABS probe BGT-BYX; painted metal bracket

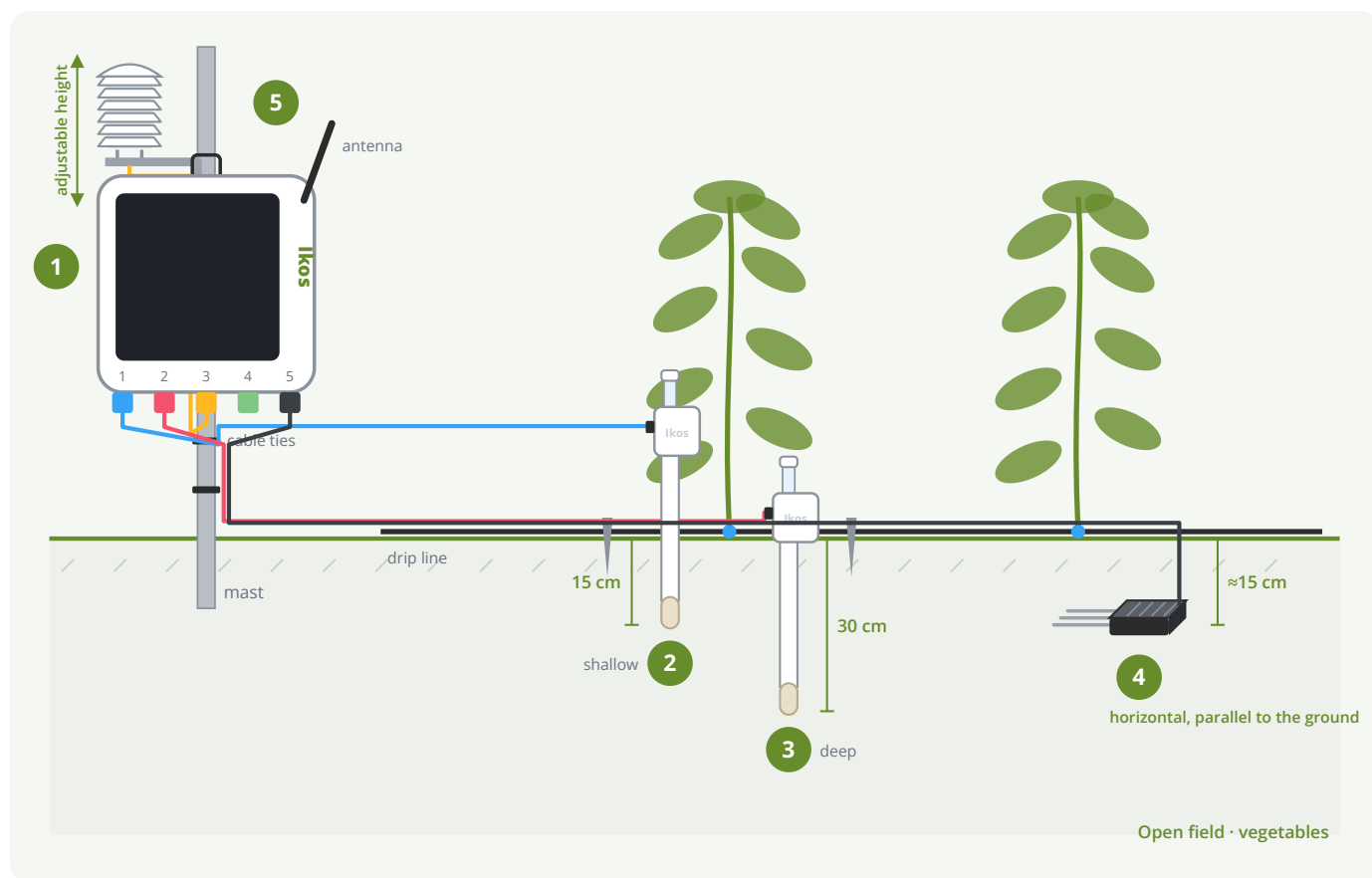
Channel 3. Fixed to the mast with its bracket, at crop height.



Installation kit

Controller bracket	1 pc · White bracket tied to the mast with a cable tie; the Controller clips into it.
Antenna	1 pc · Screws onto the side of the Controller.
Dripper anchor stakes	2 pcs · Hold the drip line to the ground next to the tensiometers.
Cable ties	9 pcs · To fix the bracket and cables to the mast.
Material	Controller bracket: ABS; Dripper anchor stakes: Plastic (PVC); Cable ties: Nylon

Installation



Channel colours: 1 shallow tensiometer (blue) · 2 deep tensiometer (red) · 3 DPV (yellow) · 4 PAR (green) · 5 Multisensor (black).

Assembly steps

1. Screw the antenna onto the side of the Controller and each ceramic tip onto its tensiometer body.
2. Tie the bracket to a mast in an open area with a large cable tie and clip in the Controller (1), facing south.
3. Bury the tensiometers one on each side of the plant, forming a triangle with the dripper: the shallow one at 15 cm and the deep one at 30 cm. Anchor the drip line with a stake on each side.
4. Bury the Multisensor horizontally at the same depth as the shallow tensiometer, at the next plant.
5. Fix the DPV externo to the mast with its bracket, above or below the Controller depending on the current plant height.
6. Connect the cables by channel (1 shallow tensiometer, 2 deep, 3 DPV, 5 Multisensor), fix them to the mast with cable ties and switch on with the ON-OFF button.