Hydroponics

AGRÓNIC 5500

Controller for the control of irrigation and fertilization in hydroponic crops and soil crops.

GUARANTEE OF QUALITY AND SERVICE · SINCE 1985 ·

SISTEMES ELECTRÒNICS PROGRÉS

Descripción

Controller for the control of irrigation and fertilization
in **hydroponic crops and soil crops.**

Regulates the pH of the irrigation water and injects fertilizers by CE and / or units.

Read analog, digital sensors and counters.

Through sensors and conditioners, it starts and stops programs, modifies irrigation and fertilizers.

It controls the temperature and the environmental humidity by means of **fogging** in greenhouses.

The irrigation programs can apply **phytosanitary treatments.**

It mixes two waters with different salinity to obtain a determined EC.

It cleans filters, initiates the washing by differential pressure or by time or volume.

It manages diesel engines, both motor pumps and generator sets.

It registers all the anomalies that are produced and **actions** that it carries out, as well as a history, with registers every 10 minutes, for each sector and sensor that exists in the controller.

It connects with the **Agrónic APP, Agrónic Web and Agrónic PC** remote management tools.

It controls valves, analog sensors, counter sensors and digital sensors by radio using AgroBee-L radio modules at distances of up to 2500 meters between two point.

Available in Spanish, English, French, Italian, Portuguese, Catalan and Polish languages.

There are two types of format, wall box or to be embedded in cabinets or desks.

Riego

It manages the irrigation of 30 sectors through 16 programs.

Each program can:

- Activate from 1 to 9 sectors.
- Fertilization through conductivity regulation (EC) or by uniform application of the units.
- Regulate the EC of incoming water.
- Start the irrigation in different ways: by schedule, through constraints assigned to sensors, or at the end of another program (sequential).
- Works based on days of the week or by frequency of days.
- Choose a schedule and an active period.
- Perform pulsed irrigation in several activations separated by a period of time.
- Set up different irrigation units in each program, by time (hh:mm, mm'ss") or by volume (m3, m3/ha, hh:mm/ha).
- Distribute the volume proportionally among the irrigating sectors at the same time according to the expected flow. The volume distribution information is saved in the history.

Fertilización

It controls the injection of 4 fertilizers, an acid, a fertilizer for phytosanitary treatments, and an agitator.

It applies the fertilizer by conductivity regulation (EC) or by uniform application, independently for each program.

Application via the EC regulation program of a proportion among fertilizers according to the EC reference.

Distributes the amount of each fertilizer inside the irrigation system to achieve uniform application.

Injection with venturis by pulsed outputs. Optionally, with inverter via external transmitter.

Pre-irrigation and post-irrigation may be different in each program.

Determining factors

The system has a total of 50 determining factors with which it carries out direct actions to programs, taking into account the information of the digital, analogue, or meter sensors, or according to the state of the EC, pH, or mixture regulation.

Information on

- Digital sensors
- Analogue sensors
- Meter sensors
- EC regulation
- pH regulation
- Mixture
- Communication

Determining factors

Types of conditioners

- Start
- Stop
- Start / Stop
- Notice or record
- Irrigation Modification
- Fertilization Modification
- Irrigation frequency modification

Programs

Fogging

It manages the fogging of up to 4 groups with a maximum of 8 valves per group.

It controls the humidity in greenhouses through starting conditions (digital or analogue sensor) or through temperature or relative humidity sensors.

Two water mix

With the option, “2 Water Mix,” **you can mix water with different salinities to achieve a certain EC in the input water**, regulating one or two motorized valves. You can configure an EC reference in each program.

Solar Irrigation

Use solar energy to carry out irrigation. It drives motors using solar panels connected to a solar radiation sensor and a frequency inverter.

It combines solar energy and the power of the electric grid or a diesel engine in hybrid installations to ensure irrigation on cloudy days or after daylight hours.

Solar irrigation also allows for irrigation at different pressures, prioritizing higher pressure sectors.

Pumping

The system has 2 general outputs for assigning 2 motors. From the sectors, you can choose the motors used.

It allows you to choose **the activation and deactivation time of the motors or sectors** to avoid hydraulic shock.

With the “Diesel motor control” option, you **can control a diesel motor or generator set** with outputs for starting, stopping, contact, and preheating. It also detects failures.

Cleaning filters

Manages the cleaning of up to 9 filters.

Cleaning is initiated by pressure difference, by time limit, or by volume of water circulation.

It allows you to choose the filters’ cleaning time for when you want a break between them, if the cleaning is done at the beginning or during the irrigation, and if, when you start cleaning the filters, you want to stop the sectors and fertilizers or not.

Reading

The system keeps readings of:

- **Records** of anomalies and events. For example, when a program is enabled, when there is a power outage, if the controller goes out of service, etc.
- **History** per day of:
  - Programs: start-up defined.
  - Sectors: time and volume of irrigation and fertilizers, average EC, and pH.
  - Filters: number of cleanings.
  - Analogue sensors: average, maximum, and minimum values.
  - Meter sensors: irrigation, leakage, fertilizer, and rain.
- **Accumulated** by sector or meter by volume, time, flow, fertilizer, or rain, from a starting date.

The remote management programs give more detailed information on the readings, visualizing the data in 10 min fractions of the sectors, analogue sensors, and meters, in table or graphic format.

Manual control

Through manual orders, the system can:

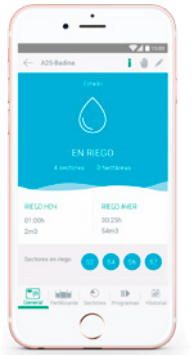
- Start, pause, or stop a program
- Pause a program for a few hours
- Put the controller out of service or generally stop it
- Start or stop filter cleaning
- Stop alarms and failures
- Put sectors in manual or automatic mode
- Put nebulization function in manual or automatic mode
- Calibrate the EC and pH sensors
- Modify the virtual sensors
- Activate outputs

External modules

With the “AgroBee-L Link” option, **the controller links with AgroBee-L radio modules**, expanding the possibilities and the use of new features.

The different modules in the range **activate valves and other irrigation elements, as well as the reading of digital, analog and meter sensors.**

The AgroBee-L modules work with LoRa radio modulation, which operates in the free bands of 868 MHz, 433 MHz and 915 MHz, obtaining coverage radios of up to 2500 m between two points (depending on the orography).



Agrónic APP

Application for mobiles that allows to manage from any place the irrigation and fertilization of the plots where an Agrónic is installed.

It allows you to consult and edit the controller, know the status of the plots of land by list or on a map, act manually on irrigation programs or sectors, consult graphs of the sensors and sectors, and much more.

Any event generated in the controller can send a warning to a mobile device through a “Notification.”

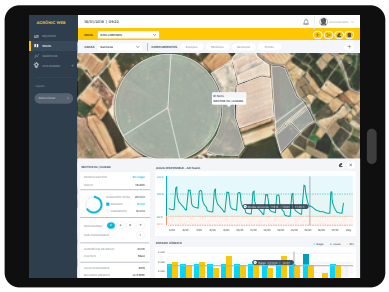
Agrónic PC

Program for Windows, which allows you to configure, program and consult all the features of the controller in real time, in a more intuitive and easy way.

It lets you consult, edit, and configure programs, sectors, external modules, fertilizers, filters, sensors, and determining factors.

Synoptics can be created to see an overview of the plots, and graphics for wider monitoring.

Agrónic Web



Ideal tool for the analysis and optimization of irrigation and fertilization of the plots where an Agrónic controller is installed, through the computer browser or tablet.

Agrónic Web collects information on the status of sensors (soil, plant, climate, and consumption) connected to the controller and data from APIs and processes them to be visualized through graphs and records.

It allows for consultation, editing, and configuration of programs, sectors, pivots, external modules, fertilizers, filters, sensors, and conditions.

You can create maps of the installations and check the status of sectors, external modules, and sensors, and control actions on all of them.

Through multi-user management, the main user can create sub-users and give them different permissions (consultation, editing, and configuration) on all their controllers.

Options

Options to expand the controller's features.

GPRS link + SMS messages

Option to connect via GPRS, and/or receive SMS messages from the controller.

WiFi link

Option to connect via WiFi router.

RS485 link

Serial port to connect via RS485 + USB junction box.

AgroBee-L link

Option to link external modules AgroBee-L 868 MHz, 915 MHz and 433 MHz.

SDI-12 extension and 4 analog inputs

Board to incorporate 8 sensors with SDI-12 protocol + 4 analog 4-20mA sensors.

Double voltage generator set on 12 VDC

Option for starting the generator set and electropump.

Cloud

(Agrónic APP + Agrónic Web) License to connect with the Progrés cloud.

PC + Cloud

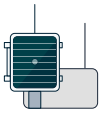
(Agrónic PC + Agrónic APP + Agrónic Web) License to connect up to 3 PCs/Servers.

USB link

Option to connect via cable.

Radio link 433 MHZ

Option to connect via Radio.



AgroBee-L + GPRS link

Option to link external modules AgroBee-L with GPRS modem included on the same board.

6 analog inputs extension

Option to expand the analog inputs.

Diesel control engine

Ideal option for the automatic starting of a motor pump or a generating set.

2 waters mixing

Option to control the EC of the inlet water.

Summary of benefits

Models

- 10 digital outputs expandable to 30 (v1) (all models include 4 more outputs for fertilizer and 1 for acid).
- 6 analog inputs expandable up to 16 (v1)
- 10 non-extendable digital inputs.
- Power supply at 12 Vdc and outputs for 12 Vdc or 24 Vac.
- Double voltage.

Functionalities

- 30 sectors.
- 16 irrigation programs of up to 9 sectors each.
- 16 digital sensors.
- 40 analog sensors.
- 10 sensors counters.
- 50 conditioning factors.
- 4 fertilizers (EC or uniform fertilization).
- 1 acid or base.
- 1 phytosanitary treatment (fertilizer 5).
- 9 cleaning filters in a group.
- 4 nebulizations by temperature and/or humidity.
- Mixture of two waters of different salinity.
- Automatic start and stop of diesel engine.
- Control of solar irrigation.

Warranty

The Agrónic 5500 complies with the CE marking directives.

The products manufactured by Progrés enjoy a guarantee of two years against any manufacturing defect.

Compensation for direct and indirect damage caused by the use of the controller is excluded from the guarantee.

Sistemes Electrònics Progrés, S.A.

Since 1985, we have been dedicated to the design and manufacture of electronic equipment for agricultural fertirrigation such as drip irrigation, spraying, and hydroponics and other water controls such as remote management in irrigation communities, parks, and gardens, and also for environmental control in greenhouses and on farms.

Our range of irrigation controllers is one of the most complete in existence and some of our models have been pioneers worldwide.

Because it is configurable, our systems can be adapted to the particular needs of each installation.

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ISO 9001 BUREAU VERITAS Certification

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