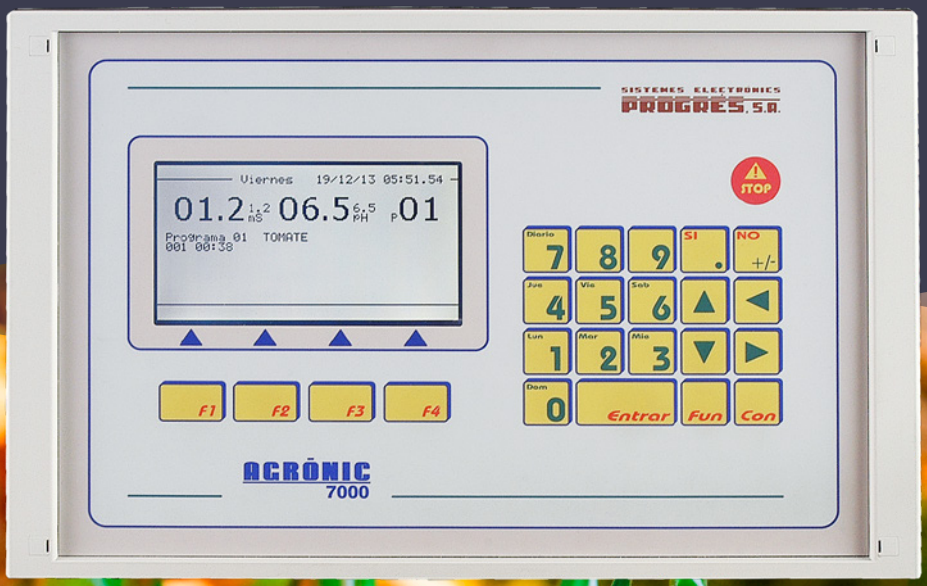
Hydroponics

AGRÓNIC 7000

The most complete controller for irrigation control and fertilization in hydroponic crops and soil crops.



GUARANTEE OF QUALITY AND SERVICE · SINCE 1985 ·

SISTEMES ELECTRÒNICS PROGRÈS

Description

The most complete controller for irrigation control and fertilization in hydroponic crops and soil crops.

The Agrónic 7000 is a very complete fertirrigation controller designed for irrigation control, fertilization by EC and by units of time or volume, regulation of acidity, fertilizer agitation, pumping, filter cleaning, drainage control, reading sensors and conditioning programs through them, etc., with option for pressure control by program, as well as fault detection and complete data visualization.

Basic model with 40 independent outputs, expandable up to 120 (with 5 boards of 16 relays) plus 16 inputs for digital signals, expandable up to 32 and 16 analog inputs. It also has 8 pulse outputs for EC injection and 2 for acid injection and optionally 12 analog outputs.

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

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

Irrigation

Allows the control of up to 200 irrigation sectors governed by 24 programs, which include the values of:

- 6 hours of start.
- Irrigation by days of the week or days of breaks.
- Irrigation control by drainage trays.
- Timetable and active period.
- Start by digital or analogue level sensors, by radiation or solar energy, by the integration of temperature and by level of humidity or water content in the soil.
- Pushed irrigation, automatic modification of the time between irrigation by radiation or solar energy and by drainage.
- Sequential irrigation from another program.
- 9 irrigation groups with priority within the group.
- Sequence of irrigation of 32 sectors by program with independent units of irrigation and pre-irrigation, groupable from 1 to 32 the sectors that irrigate at the same time. Post-irrigation units also independent.
- Modification of the irrigation units by a manual factor and by determining factors.
- Carrying out safety irrigation due to lack of start and continuous start control.

Fertilization

Capacity for up to 8 fertilizers plus 2 acids or acid and base.

Fertilization can be performed by conductivity (EC) and by units of time or volume, choosing the number of fertilizers that will act in each mode.

Each fertilizer can have a volumetric counter and an assigned agitator.

General output of fertilizers and an auxiliary for each fertilizer.

The injection by EC is done by pushed outputs or, optionally, by 0-10 Volts outputs. Possibility of re-gulating the EC by difference with the EC input and proportional compensation for the variations in this EC input.

Drainage

System for the control of quantity and quality water drained in a maximum of nine different trays.

The control indicators can be electrical conductivity, acidity, level in millimetres of the tray, amount of water drained, etc. Two operation possibilities to compensate the drainage:

- Modifying the irrigation application time or volume". Before starting a new irrigation or during it, the irrigation units will be modified to compensate the drainage produced and to be able to carry out the programmed one, according to the data collected from the previous irrigation or in the current one.
- Modifying the frequency between irrigations. When starting a new irrigation it will correct the time to apply the next one in relation to the drainage made in the previous one.

Flow

Each irrigation sector can be assigned to one of the 6 possible volumetric counters to irrigate in litres or m3.

In the accumulations the volume of irrigation and fertilizer is distributed proportionally to the nominal flow assigned to each sector.

The fertilizer is programmed in liters or centiliters with 8 counters.

Overflow or underflow alarms.

Determining factors

The controller has a total of 96 determining factors, 4 for program, with which it performs direct actions to programs, taking into account the information of the digital, analog or meter sensors.

Information on

- Solar energy
- Tray level
- Start sensors
- Drainage
- Rain
- Room temperature
- Radiation

Determining factors

Types of conditioners

- Start
- Irrigation modification
- EC reference modification
- Fertilization modification
- Irrigation frequency modification

Programs

Trays

Controls up to 9 drainage trays with measurement of drained volume, EC, pH and alarms. Independently, it also controls the analogue level of the trays for the start of supplementary irrigation.

Two water mixing

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.

Curves

Each irrigation program has an associated curve in order to modify the values of irrigation units, irrigation frequency, CE and fertilizer units for 6 time periods of the day.

Alarms

It can generate alarms for more than twenty different conditions by activating one of the three alarm outputs (EC, pH, general), recording the anomaly and sending an SMS message or notification through APP.

Manual control

Through manual orders, the system can:

- Start, stop and shut down irrigation programs.
- Out of general service.
- Start or stop filter cleaning.
- Termination of alarms and faults.
- Direct activation of the outputs.
- Modification of internal program counters such as days between irrigations, pending activations, frequency between activations and drainage correction

Pumping

It has 1 to 6 general irrigation outputs that can be assigned to sectors, with independent activation and deactivation timings.

General No. 1 can provide a 0-10 volt analog output to connect to a frequency converter and maintain a pressure in the separate irrigation pipe for each program.

Filter cleaning

There is no limit on the number of filters to use, highlighting the following features:

- Cleanings can be by differential pressure switch, time or volume.
- Three independent cleaning times to assign to groups of filters.
- Pause time between filters.
- Can be cleaned within an irrigation or wait for the start of an irrigation program.
- Stop or not of the sectors when cleaning.
- Assignment to general outputs and counters.
- Control of continuous cleaning

Reading

The following records are available, always up to date:

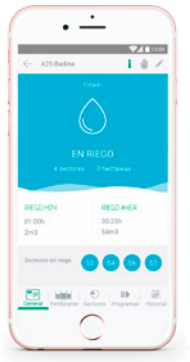
- **Acumulated**: of the sectors and one of general to show the irrigation units in time and volume plus the calculated flow and the units applied of each one of the fertilizers.
- **Actions**: showing the day and time of each of the actions carried out by the controller, such as anomalies, irrigation starts with their main values, drainage carried out in each irrigation, actions of the filters, agitators, erasings, etc. The information can be selected by date, programs and anomalies. The recording capacity is several weeks.
- **New anomalies**: this register shows the anomalies that have occurred since the previous display.
- **History**: of the last 15 days, in which it will show the beginnings of each of the programs, cleaning of filters carried out, integration of solar radiation and ambient temperature. Plus, for each sector, the irrigation units carried out, the average EC and pH applied and the fertilizer units. As well as, for each tray, the average of the day of the drainage carried out and the pH and EC measurements.
- **Sensors**: with the graphic recording of the last 24 hours of the sensors of EC conductivity, pH acidity, radiation, relative humidity, start sensors (6), air and water temperature. In the EC and pH sensors, the last 10 minutes are also recorded in detail.

External module Agrónic Monocable

Communication bus with 2 wires cable that allows communication and power up to 120 field modules robustly up to 10Km long. In less than 2 minutes we have the information of all modules in the central station.

External module Agrónic Radio

Telecontrol system that works with radio frequency by free band 433 MHz, can reach a maximum distance of 2.8 km, depending on 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” or an “Alarm”.

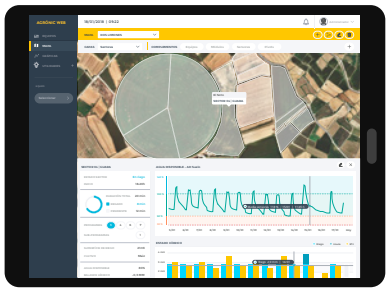
Agrónic PC

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.

PC + Cloud

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

GPRS link

Option to connect via GPRS.

USB link

Option to connect via cable.

RS232 link

Serial port to connect with cable or GSM modem.

SMS messages

Option to send and receive SMS messages.

RS485 link

Serial port to connect via RS485 + USB junction box.

Agrónic Radio

Option to connect to external modules Agrónic Radio.

Agrónic Monocable

Option to connect to external modules Agrónic Monocable.

2 waters mixing

Option to control the EC of the inlet water.

Water pressure regulation

Option to regulate the inlet water.

16 relay outputs expansion board

Board for 16 relay outputs extension. Expandable up to 5 plates.

12 analog outputs expansion board

Extension board 12 analogue outputs.

16 digital inputs expansion board

Expansion board for 16 digital inputs.

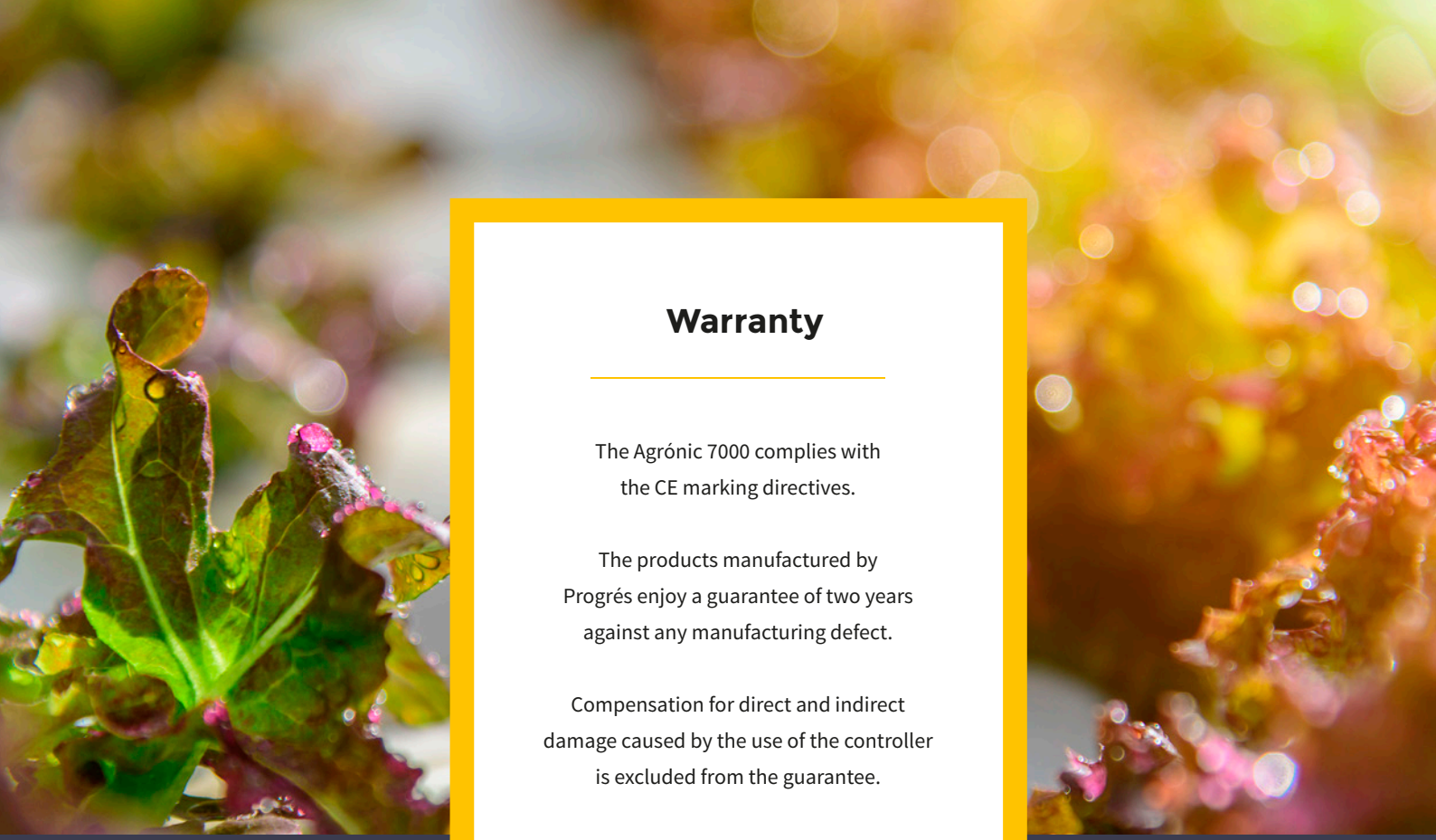
Summary of benefits

Models

- The controller can be ordered at 230V, 115V, 230/115V, 12Vdc or Double voltage for generating sets.

Functionalities

- 200 sectors.
- 24 irrigation programs.
- 40 relay outputs (expandable to 120 relays with 16 relay plates).
- 16 digital inputs (expandable to 32).
- 47 digital sensors.
- 16 analogue inputs.
- 53 analogue sensors.
- 12 analogue outputs.
- 10 pulse outputs (for 8 fertilizers and 2 acids or bases).
- 14 sensor counters (6 irrigation counters and 8 fertilizer counters).
- 5 determining factors per program.
- 8 fertilizers (fertilization by EC and by units of time or volume).
- 9 drainage trays.
- 2 acids or base.



Warranty

The Agrónic 7000 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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