

Technical Data



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> Agronic 7000



DESCRIPTION:

Application

- Irrigation e fertigation control unit
- EC and pH management
- Soilless greenhouses

Specifics

- LCD display - 240 x 128 pixel - typefaces-backlit
- Language: italian (others on request)
- Waterproof soft-touch keyboard, alphanumeric 24 keys
- Built-in version for panel installation

Hardware Features

- Outputs: 40 (expandable up to 200)
- 220/24 VAC transformer included in the specific model
- Digital inputs: 16 (expandable)
- Front panel dimensions: mm 365 x mm 235 x mm 55
- Analog inputs: 16 (expandable)
- Box housing dimensions: mm 355 x mm 225
- Fertilizer outputs: 8 for Ec - 2 for pH
- Internal unit dimensions: mm 285 x mm 235 x mm 80

Materials

- Front panel: aluminium

MODELS CHART

Model	Power supply	Solenoid type output tension
220/24 AC	220 V 50 Hz AC	24 V AC
12 V DC	12 V DC	12 V DC

Model	40 built-in stations
	Code
220/24 AC	OPG1200
12 V DC	OPG1201

- Complete fertigation computer, designed for irrigation control, fertilization by Ec and pH probes, fertilizer mixing, pumping, filter cleaning, drainage control, program determination by reading sensors
- Management via PC or mobile phone, fault detection and complete data display
- The basic model has 40 independent outputs plus 16 inputs for digital signals and 16 analog inputs, all of which can be extended with 8 fertilizer injection channels and 2 for acid control outputs

Irrigation

- It can control up to 200 irrigation sectors, managed by 24 programs, which include 6 start times
- Sequential irrigation between programs
- Irrigation for days of the week or days off
- Nine irrigation groups with priority within the group
- Hours and active periods
- Irrigation sequence of 32 stations per program with independent irrigation and pre-irrigation values
- Start by means of digital or analog level sensors, solar radiation, by integrating temperature and by soil moisture level or substrate moisture
- The sectors that irrigate at the same time can be grouped from 1 to 32
- Pulse irrigation, automatic modification of the time between irrigations by solar radiation and by drainage
- The post-irrigation values are also independent
- Changing irrigation values by manual intervention and determining factors
- Safety irrigation due to lack of start-up program and continuous start-up control

Fertigation

- Management of up to 8 fertilizer channels plus 2 channels for acids
- Fertigation can be done by conductivity (Ec) and by unit of time or volume, choosing the number of fertilizer channels that they will have to inject at any time
- We can assign a volumetric meter and a mixer to each fertilizer channel

Pumping

- Control from 1 to 6 outputs, which can be assigned to individual sectors, with independent activation and deactivation times
- Output 1 can provide a 0-10 volt analog command, to connect it to a frequency converter and maintain a constant and independent pressure in the irrigation pipe for each program

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Counters

- Each irrigation sector can be assigned one of the six volumetric meters that can be connected to irrigate in volumetric mode (liters or m³)
- In the accumulations, the irrigation volume and the fertilizer are distributed in proportion to the nominal flow assigned to each sector
- The fertilizer is programmed in liters or CC with 8 counters
- Alarms for excess or lack of flow

Drainage

- System for controlling the amount of water drained from crops and measuring the parameters of the water drained in up to 9 different drainage trays with a measured waste volume, EC, pH and alarms
 - It also independently controls the level of the trays with analog sensors for starting additional irrigations
 - The parameters can be electrical conductivity, acidity, drained level in millimeters, amount of drained water, etc.
- Two operational options for drainage compensation:*
- 1) "By changing the time or volume of the irrigation application". Before starting a new watering cycle or during a current cycle the irrigation values must be changed to compensate for the drainage produced and to be able to run the cycle, based on data collected in the previous or current watering cycle
 - 2) "By changing the frequency between irrigation cycles" - at the start of a new irrigation cycle, the time to be applied in the next will be corrected in relation to the drainage of the previous cycle

Determining factors

- We can connect various sensors to the computer for reading, able to modify the irrigation programs in order to adapt them to the water needs at any time
- *There are 5 determinants that can affect each of the irrigation programs and can affect these in the following ways:*
- "Start irrigation" using solar radiation, drainage level, soil moisture or water content and ambient temperature, etc.
- "Change irrigation values" using solar radiation, drainage and rain
- "Modify the reference Ec" by means of solar radiation and rain
- "Modify the fertigation values" by means of solar radiation and rain
- "Change the frequency between irrigations" by drainage and solar radiation

Curves

- Each irrigation program has a curve to change the values of the irrigation units, its frequency, EC and fertilizer units for 6 different times in a day

Drainage

- It can control up to 9 drainage trays with a measured waste volume, EC, pH and alarms
- It also independently controls the level of the trays with analog sensors for starting additional irrigations

Filter

- There is no limit to the number of filters that can be managed, with the following advantages:*
- Cleaning can be done by differential pressure switch, time or volume
 - There are 3 independent cleaning times to be assigned to filter groups
 - Pause time between filters
 - Cleaning can take place during irrigation or can be done at the beginning of an irrigation program
 - Irrigation can be stopped or not during cleaning
 - Continuous cleaning control

Alarms

- It can manage alarms for more than 20 different conditions by activating one of the three alarm outputs (EC, pH, general), recording the anomaly and sending an alert via SMS message (SMS option)

Premixing

- Optionally it allows the mixing of two waters of different salinity, with an independent resulting conductivity in each of the irrigation programs

Expansion modules

- Ability to connect with different expansion modules of different types:
- Expansion modules: up to 16 modules in which communication and power supply are performed with a 24 Vac two-wire cable, with two different products:
 - Type A: with 5 relay outputs and 2 digital inputs
 - Type B: with 5 relay outputs, 2 digital inputs plus 2 analog inputs for pH, EC, level, drain, etc. sensor.
- Agronic single cable: up to 120 modules with up to 8 bistable solenoids, up to 10 digital inputs and 2 analog inputs, except in encapsulated modules, which have no analog inputs
- Agronic Radio 433 GHz: up to 60 modules with up to 16 bistable solenoid outputs, up to 16 digital inputs and 2 analog sensor inputs for each of them

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Automation

Options		Code	Description
Option for expanding command outputs and digital/analog inputs of Agronic 7000		FER455	16 relay outputs
		FER550	12 analog outputs
		FER551	16 digital inputs
Option for mixing of 2 different water sources		FER558	Mixing of 2 different water sources
Option for external inverter management by 0-20 or 4-20 mA for a steady line pressure, FER550 board required		FER559	In line water pressure regulation
Transmitter box for pH and Ec probes. It allows interface between the probes and Agronic, 4-20 mA signal		FER400	Probe box pH/Ec
		FER401	Probe box pH
		FER402	Probe box EC
Option for expanding connectable sensors		FER553	Sensors expansion option
Option for connecting to Progres single-cable system		FER454	Agronic single-cable option
Communication - Hardware		Code	Description
Via cable local communication	RS485 max 1500 mt	FER556	RS485 link
	RS232 max 15 mt	FER566	RS232 link
	USB 2.0 max 15 mt	FER514	USB link
Remote communication	Modem GPRS	FER517	Option modem GPRS
Communication - Software		Code	Description
It supplies access to the system by PC programm. By USB, RS232, RS485 only one PC connection. By GPRS module and Wi-Fi connection up to 3 PC. Gprs or Wi-Fi module required. Activation by unblock code		FER500	Agronic PC programm option (including Agroni PC + Agronic APP)