

AGRÒNIC filtros

INSTRUCTION MANUAL

VERSION 2

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PRESENTATION

We wish to take this opportunity to thank you for the confidence in us which you have demonstrated in expressing interest or acquiring the Agrònic Filters.

This confidence, for our part, stimulates our efforts to meet and surpass the expectations of our clients to justify the traditional quality of our products.

This manual will explain the specification of the equipment as well as its installation and use.

However, if after reading this you still have any doubts, contact us and we will happily answer them.

1. BASIC FUNCTIONAL DESCRIPTION

AGRÒNIC filtros is a controller for the automatic cleaning of filter batteries with different possibilities of starting and working.

There are 3 different models according to the number of filters to control: for 6, 12 and 18 filters. Models for 6 and 12 filters can be increased whenever necessary, up to 18, sending them back to the factory.

Filter cleaning can be started by:

a) By a “drop in pressure”: Working whenever the controller receives a signal from the differential pressure gauge which controls the drop in pressure between the input and outlet of the filters, as a consequence of the dirt accumulated in them.

b) By “volume”: Working every certain volume of filtered water. In this case, the controller must receive signals from a volumetric impulse transmitter.

c) By “time”: Working every certain time of water circulation through the filters (in this way, the controller needs to receive the corresponding external signal).

d) By a combination of the “drop in pressure” with the “filtered volume” or the “time that has gone by” and in this way a minimum periodical cleaning is guaranteed, if it has not been necessary to do it before, due to an unexpected accumulation of dirt.

Once the cleaning order has been detected, the different connected filters will be activated sequentially (one after the other) by the controller. The duration of the cleaning of every filter can be programmed independently.

There is a timing which affects all filters equally: the pause between filters. This timing is important to recover pressures in the net and avoid overlapping in the hydraulic valves.

Both a cleaning sequence and the outlets can be started or stopped manually with the unit. The unit can also be set at stop (deactivated).

The user can easily program all the parameter and timing values of the controller.

The unit shows the state of the unit at all times, indicating the filter that is working, whether it is working, the state of the inputs and whether there is any outlet which has been activated in a manual way as well as showing whether the controller is at stop. It also informs about the circulating instantaneous flow and about the volume and time units that have gone by since the last cleaning.

At the TOTALS function, the unit shows the number of cleanings that have taken place due to a “drop in pressure” and “volume” or “time”. The total water volume, which has circulated through the filters or the time it, has been working, since the last time it was set at zero are also indicated.

The unit has the following inputs:

- For the differential pressure gauge which detects the drop in pressure in the filters, (necessary for the starts by “drop of pressure”),
- For the detection of water flow through the filters with a signal that comes from a programmer, calliper, etc., (necessary for the starts “by time” and for the total of hours that the filter installation has been working),
- For the volumetric impulse transmitter, (necessary for the starts by “volume”, information about the instantaneous flow and volume total of filtered water),

- For the detection of breakdowns in the installation,
- For different options.

A timing for detection delay can be assigned to the inputs, in order to avoid inadequate signals.

There can be three types of outlet: at 24 Vac, at 12 Vdc and at 12 Vdc for latch valves (with two or three wires) with low consume.

MODELS AND OPTIONS

- Models for 6, 12, 18 outlets.
- 220 Vac version and 24 Vac outlets.
- 12 Vdc version and 12 Vdc outlets.
- Version with the equipment provided in a box with transparent cover.
- Version with the equipment prepared to build-in a cupboard or a desk.
- Option with outlets for latch valves (with two or three wires) and low consume. Due to the fact that this version has a low consume of the unit and its electrovalves, it is very suitable for those installations which work with a battery and which do not have a diesel engine or a solar cells to recharge it.
- Version for filters with cleaning and rinse. It can have 2, 4 or 6 filters. Every filter uses three relays to control the 5 necessary hydraulic valves. The programmer will ask for every filter the cleaning and rinsing time.

WARRANTY

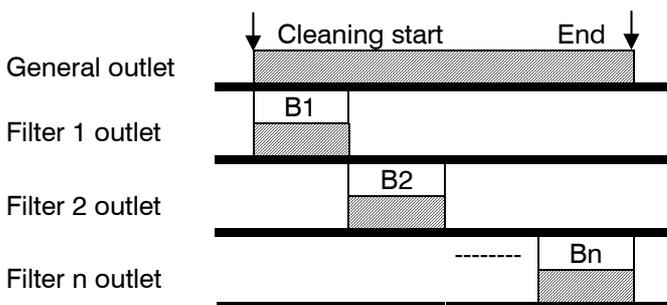
The Agrónic filter controller meets all the norms set by the EC.

The products created by PROGRÉS enjoy a two-year warranty against all manufacturing defects.

Compensation for direct or indirect damage caused by the use of the equipment is excluded from the guarantee.

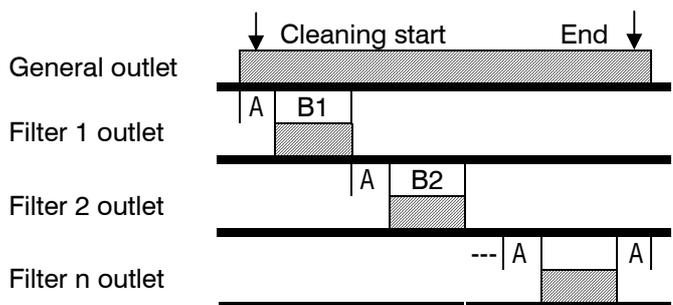
GRAPHIC OF A FILTER CLEANING SEQUENCE

-Example A- Without pause timing between filters.



(B1-n) - Working seconds per filter

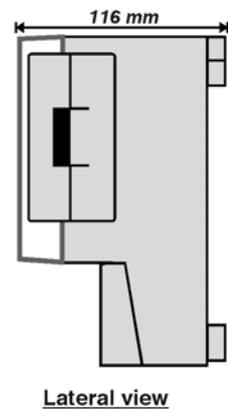
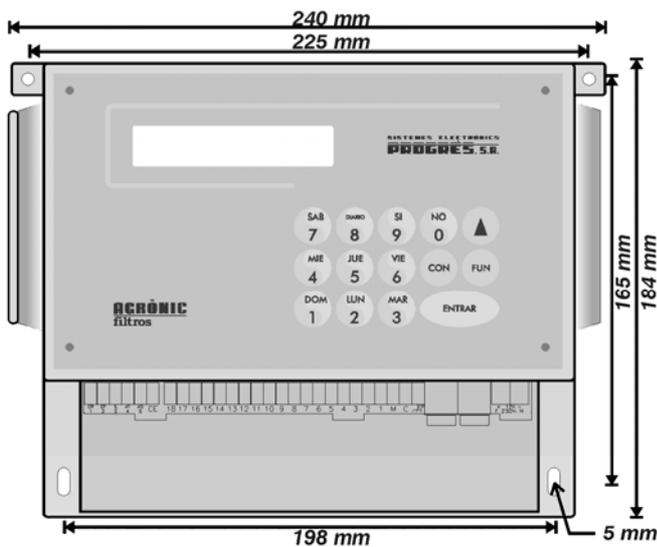
-Example B- With pause timing between filters.



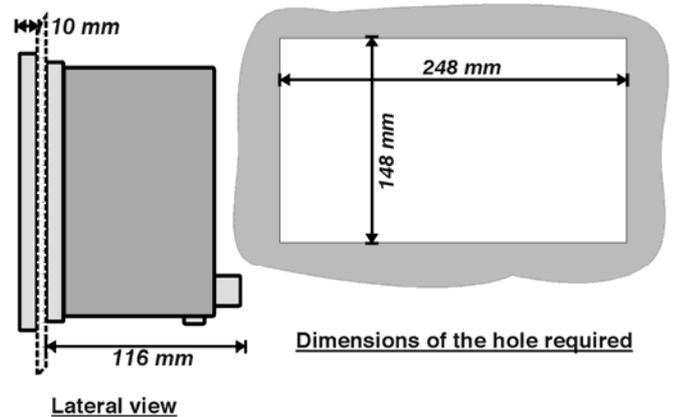
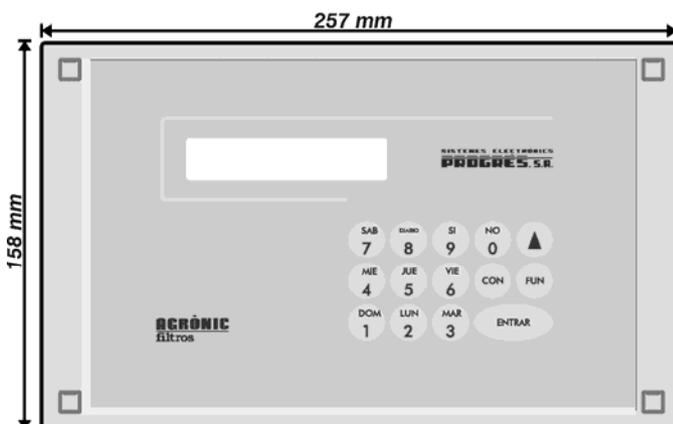
(A) - Pause seconds between filters

2. DIMENSIONS

Model: "mounting box"



Model: "build-in"



3. INSTALLATION

3.1. PLACING THE UNIT

Place the unit at the right position and height. Avoid direct sun exposure, humidity, dust and vibrations.

Avoid proximity to any source of interference, which could affect the correct working of the unit.

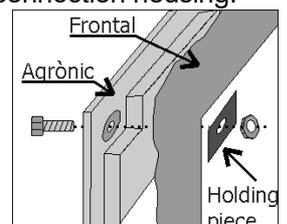
In the version with "mounting box", the equipment is provided in a hermetically sealed box (IP65) with a transparent front cover for the keyboard/displayer and an opaque cover for the connection housing.

To maintain the isolation of the unit, it is essential to keep the panels closed, as well as to install

grommets at the cable outlets, which are provided with the equipment.

For the wall mounting of the unit, there are two holed pieces in the upper corners. There are also two more holes in the inside of the connection housing.

In the "built-in" model, a hole is to be done in the frontal part of the wall or desk, according to the measures in the section DIMENSIONS. It will be held with the screws at the corners, using the four pieces provided with the unit.

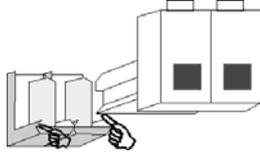


3.2. CONNECTION

The unit has to be installed following the prevailing regulations for electrical installations.

In the “mounting box” model, the grommets provided with the unit are to be installed, removing the relevant dies (this should be done with the connection cover in place and screwed to avoid possible breakage).

In the “build-in” model the terminals are placed at the back and they are the connector type. On placing the terminals check that they have been introduced in the guides, as it is shown in the figure.



It is advisable to connect the cables to the terminals with terminal connections, which are also included with the unit.

There is also a protection box for all the terminals, in case there is a risk of electrical sparks from storms entering the cables.

3.2.1. SUPPLY TO THE EQUIPMENT

Before connecting the unit, it is necessary to check its identification label where the characteristics of the power feeding are to be found.

- Power feeding at 220 Vac:

A 6 amp magneto-thermal switch is to be included in the installation. It will be used as a disconnection device and it has to be placed near the unit and at an accessible place for the user.

It is recommendable to do this as directly as possible, avoiding that the same cable supplies other sections. Use cable of the H05VV-F type, 1mm².

A fuse (general fuse) and a varistor protect the mains input. The varistor might short-circuit the fuse automatically, on detecting an overload on the line (lightning, etc.); replace it with one of the same characteristics.

For unstable or fluctuating voltages use grid stabilisers.

If the unit is to be disconnected from the power line during several weeks, it is advisable to remove the bridge marked as “J4” (next to the battery) in the circuit placed behind the keyboard, and insert it again before connecting it to the power line.

- Power feeding at 12 Vdc:

Check the polarity of the terminals.

Connect two direct cables from the battery to the equipment feeding (+12-) avoiding that those cables supply other units or elements.

If the battery is far away from the controller, use high section cables and make a reduction when entering the equipment.

The input is also protected with a fuse and a varistor.

To replace the fuse, half turn the fuse cover and insert another of the same value.

3.2.2. CONNECTING THE EARTH TERMINAL

The “build-in” model has a terminal screw to connect the protection earth terminal, and which is placed near the feeding terminals.

In the “mounting box” model, a protection terminal is not needed, but it has got a box terminal marked as:  CP to be connected to the earth terminal.

Both the earth and box terminals are used to protect the unit by directing all electrical sparks produced by the internal gas discharger to the earth. These sparks can come in through the outlet cables.

3.2.3. CONNECTING INPUTS

The contacts that join the inputs with the common have to be normally open and free of tension. Avoid placing the cables of these inputs near power lines, dividing them into two separate groups.

- TERMINAL NUMBER 3. Detector of flow circulation. In the version by time, connect a testing spike or external programmer or join it directly to terminal number 6 if circulation is continuous. In the version by volume connect a volumetric transmitter of impulses.

- TERMINAL NUMBER 4. If the unit has a differential pressure gauge which detects when filters are dirty, connect it to this cleaning start input and to the common (CE).

- TERMINAL NUMBER 5. Breakdown input to which one or several securities (maximum/minimum pressure gauges, etc...) will be connected, if necessary. These will only be accepted when a filter cleaning is taking place, leaving the unit out of work.

- TERMINAL NUMBER 6 (CE). Input common.

3.2.4 CONNECTING OUTLETS

Connect the solenoids, relays, etc. between the common of outlets and the corresponding outlet.

Do not surpass the charge per outlet and common.

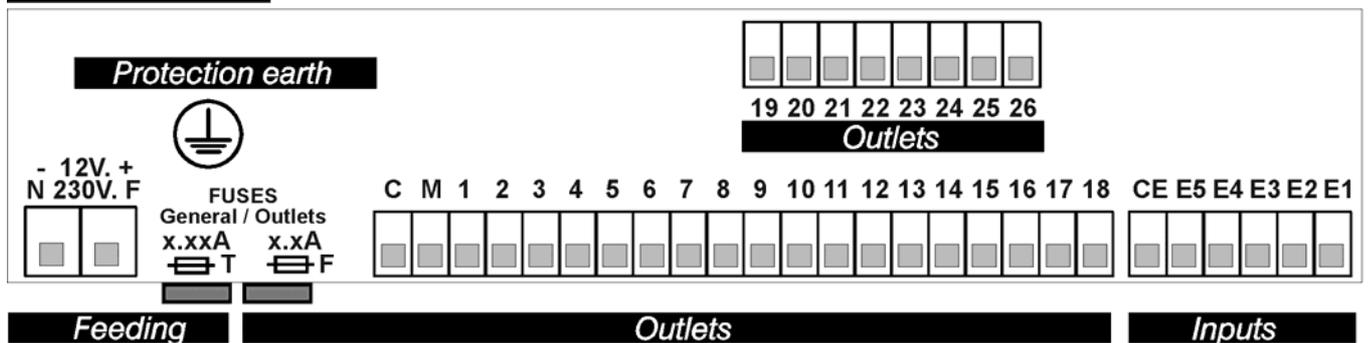
The “outlet fuse” protects from overloads and short-circuits. To change it, just half turn the cover of the fuse holder, take it out and replace it with a similar one.

The outlets are isolated from the interior circuitry by relays and protected by a varistor in each one.

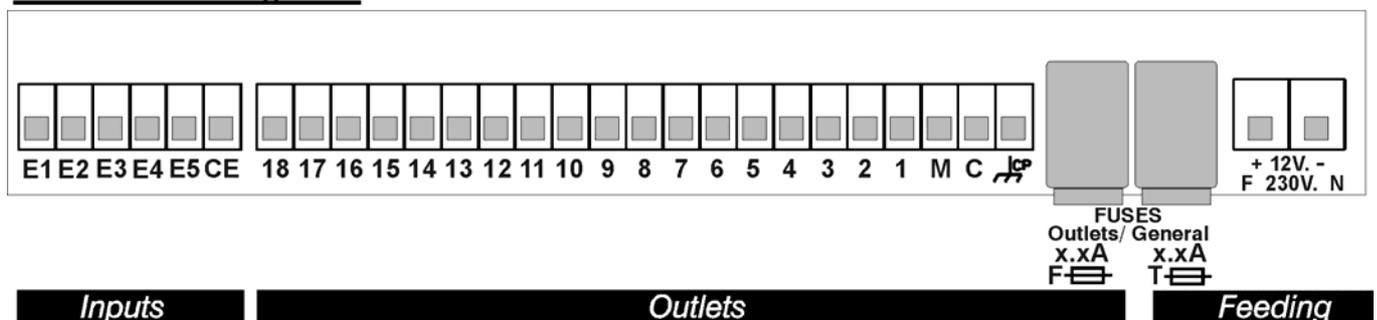
Outlet assignation tables according to unit models.

Outlets	Model		
	Input 220V, outlets 24V	Input 12V, outlets 12V	Input 12V, outlets 12V Latch option 3 cables
CP	Box terminal, connected to earth (build-in model).		Stop common
C	Outlet common 24 V.	Outlet common 12 V.	Start common
M	General valve		
1-6	Filter outlets		
1-12			
1-18			

Model "Build-in"



Model "Mounting box"



3.3. GUIDE TO MALFUNCTIONS

- Valves do not work:

Check the state of the fuses.

Check if any cable is disconnected or cut.

- The equipment does not work properly:

a) There is a black stripe on the screen:

Unplug the unit, open it, remove the keyboard and, with a screwdriver, cross the two contacts on the central part of the left side marked as "J3", during two seconds, and reconnect the supply.

b) The screen is completely blank:

Check whether the power reaches the equipment.

Check the state of the fuses.

- The unit fuses the general fuse constantly:

The overload protector is short-circuited, it is necessary to replace it. This happens when the unit is supplied at 380V, for example, or there is an overload due to a storm and the "general fuse" is superior to the one indicated in the section about technical characteristics.

3.4. ENCLOSED INFORMATION FOR THE INSTALLATION OF OPTIONS

3.4.1. LATCH OPTION

The low consumption of the equipment (0.12 watts/hour), and its latch electrovalves, make this option suitable for those installation which work with battery. It is not indispensable, but a small solar panel can be mounted to avoid the manual loading of the battery.

LATCH ELECTROVALVES WITH TWO CABLES.

This electrovalve model works reversing the polarity between the two cables, to activate or deactivate it.

One of the cables is to be connected to the outlet common "C" and the other one to the corresponding outlet.

If the electrovalve does the opposite of what the programmer has ordered it to do, it would be necessary to reverse the cables that are connected to the common and outlet.

LATCH ELECTROVALVES WITH THREE CABLES.

This models have a bridge in the right superior part of the base card to change the working voltages to the outputs (see indicative stick). Without the bridge the outputs are working to 12 Vdc and with the bridge installed they will have a voltage near to 24 volts. From the company the units are delivered with the bridge connected. The voltage depends on the type of solenoids, by this, it can be changed depending on your needs.

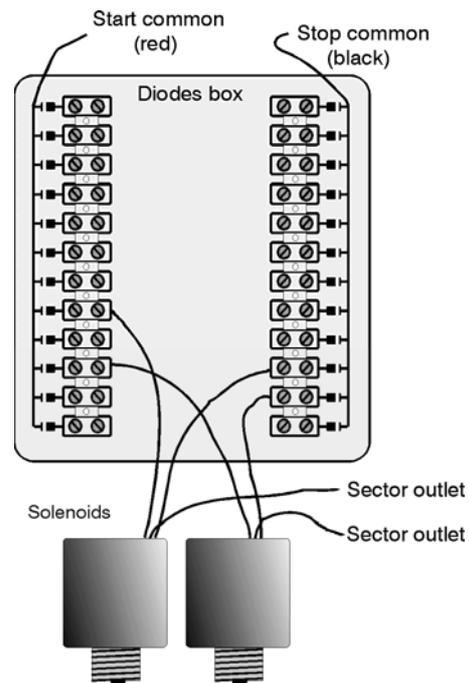
Also it is included for this version a diode box, to which two of the three cables, the red and the black one, belonging to each solenoid have to be connected. The red one will be connected to the group of terminals linked to the red cable which goes to the programmer (start common). The black one will be connected to the other group of terminals (stop common).

The order of the sector numbers is not taken into account in the terminals of the diode box.

The other cable, normally white, will be connected to the programmer, to the outlet corresponding to its sector or to the "M" general valve outlet.

In the built-in model, the black cable of the diode box has to be connected to the "CE" input common terminal and the battery negative has to be used as input common.

Example of connection:



4. TECHNICAL CHARACTERISTICS

Power supply		Units for alternating current	Units for direct current
Tension		230 VAC +5% -10% CAT II	12 VDC +10% -5%
Frequency		50 - 60 Hz	-----
Energy consumption		Inferior to 58 VA (at rest 2,7 VA)	Inferior to 7 W (at rest 0,6 W)
Fuses	Input	0.630 A, T type, 250V (slow)	0.8 A, T type, 250V (slow)
	Outlet	2 A, F type, 250V (fast)	3.15 A, F type, 250V (fast)
Keeping the memory which can be erased when there is a power cut		Battery, more than 72 hours	Condenser, 24 hours

Outlets	Number	6,12,18+1 (according to model)
	Type	By relay contact, with potential of 24 VAC (Internal transformer) or 12VDC
	Limits	40 VAC / 30 VDC, 1 Amp

Inputs	Number	5
	Type	Optolinked, to connect to contacts free of potential

Atmosphere	Temperature	0° C to 45° C
	Humidity	< 85 %
	Height	2000 m
	Pollution	Grade II

Weight (approximate)	Unit in mounting box	2,2 Kg
	Unit to build-in	2,7 Kg

Memory backup	Clock, consults	Battery or condenser
	Programme, parameters	Non erasable

DECLARATION OF CONFORMITY

It follows the 89/336/CEE Guidelines for the Electromagnetic Compatibility and the 73/23/CEE Guidelines of Low Tension for the Fulfilment of the Product Security. The fulfilment of the following specifications was demonstrated as indicated in the Official Diary of the European Communities:



Emissions EN 50081-1:94	EN 55022:1995 Class B	Radiated and conducted emissions.
Immunity EN 50082-1:94	EN 61000-4-2 (95)	Immunity to electrostatic discharges.
	EN 61000-4-3 (96)	Immunity to the electromagnetic field of radioelectric frequency.
	EN 61000-4-4 (95)	Immunity to fast transitional in common way.
	EN 61000-4-5	Immunity to overloads in the power supply.
	EN 61000-4-11	Immunity to lacks and power cuts.
Harmonics	EN 61000-3-2 (95)	Current harmonics.
Fluctuations	EN 61000-3-3 (95)	Tension fluctuations.
Low tension guidelines	EN 61010-1	Security requirements of measurement electric units, control and use in laboratory.

Symbols which may appear in the product	Protection earth terminal		Danger, risk of electroshock		Double insulation	



This symbol indicates that the electrical and electronic equipment should not be disposed of as general household waste at its end-of-life. Instead, the product should be handed over to the applicable collection point for the recycling of electrical and electronic equipment for proper treatment, recovery and recycling in accordance with your national legislation.

5. USE

5.1. FUNCTIONS

There are four functions which can be accessed with the “FUN” key. Every time this key is pressed, two out of the four functions will be displayed and the chosen function is reached by pressing from number 1 to 4 plus the “ENTER” key.

F1: Manual F2: Totals

F3: Configuration F4: Timings

The Configuration and Timing functions contain the data which are specific of the installation the controller is destined to. It is normally programmed once, when mounting the unit and they are fixed in the memory indefinitely (they are usually programmed by the installer).

The Manual and Total functions are the ones which are normally used by the user.

5.2. CONFIGURATION

The CONFIGURATION function adapts the unit to the installation asking the following questions:

- Number of filters: Enter the number of filters of the cleaning sequence.

- Time/Volume: These are the units the equipment works with. By “time”, it works in minutes and it is necessary to connect terminal 3 to the inputs so that it understands that water is circulating in the installation. By “volume”, it works with cubic metres and it is necessary to connect to input 1 a counter or a volumetric transmitter of impulses.

- Between cleanings: These are the units (minutes or m3) the unit will take before it starts a cleaning. If a cleaning is started by pressure gauge or manually, while the equipment is counting these units, the counter of these units will be set at zero. The maximum value is 9999 minutes or m3.

The following two values will only be asked if the unit was configured to work by volume:

- Impulse value: is the value of the water which has circulated every time the volumetric counter gives an impulse. The value can go from 00.1 to 99.9 m3.

- Maximum between impulses: is the maximum value in seconds that there can be between two impulses of the counter in order to detect a lack of water circulation and give 0 flow. The maximum value is 999 seconds.

It is important to **configure** the unit after connecting it for the first time.

CONFIGURATION:(...) Number of filters=00	(...)=(min),(m3),(seg).
Time:0 Volume:1=0	
Between clean=0000	
(by volume)	Impulse value = 00.0
(by volume)	Máx.between imp.=000

5.3.TIMINGS

The TIMING function is used to give the time values, in seconds, to the unit. These values will allow the perfect working of the filter cleanings. Those values are as follows:

- Filter 1 to n: Is the time it will take every filter to clean. The maximum time is 999 seconds and the values can be different for every filter. If a filter has a value 0, it will not be activated in the cleaning sequence.

- Filter pause: Is the pause value between the end of a filter cleaning and the starting of the next one. The maximum value is 999 seconds.

- Detection start by pressure gauge: Is the delay in the detection of the start by differential pressure gauge. The maximum value is 999 seconds.

- Breakdown detection: Is the delay in the detection of a breakdown, which will only be valid if the cleaning is taking place. The maximum value is 999 seconds.

TIMINGS (seg) Filter 01 = 000
Filter 02 = 000
.../...
Filter 18 = 000
Filter pause = 000
Detec. start pres=000
Breakdown detect =000

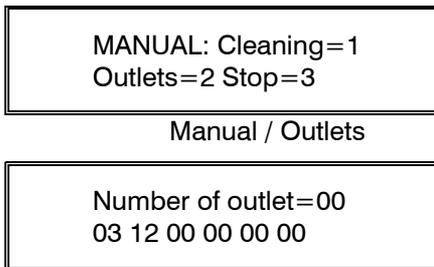
5.4. MANUAL

The MANUAL function is divided into three different options:

1.- Cleaning: On pressing 1 and ENTER, the cleaning sequence will be activated or it will be ended if it was already working.

2.- Outlets: On pressing 2 and ENTER another screen will be displayed. This screen will allow you to activate any outlet with a maximum of 6 at the same time. You will not be able to leave this function while any outlet is activated. Enter number 99 to activate the general outlet.

3.- Stop: On pressing 3 and ENTER the unit will be stopped, appearing on the screen (at CONSULTATION) a "SYSTEM AT STOP" message. But you will also be able to access all the functions. In order to end the stop proceed in the same way as you did to activate it.

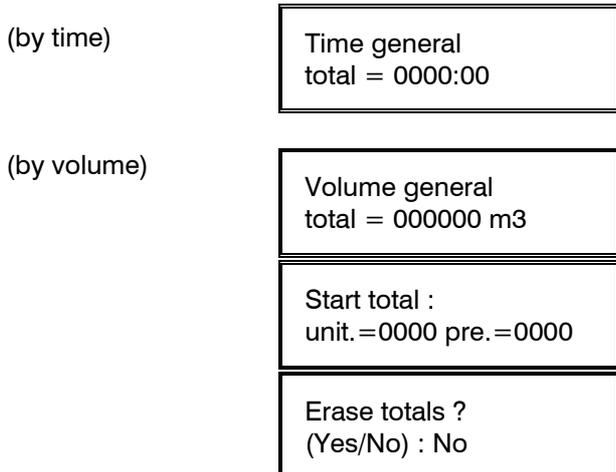


5.5. TOTALS

The TOTAL function gives, in the first screen, the total or general value of the time and volume of the water that has been circulating through the filters.

On pressing ENTER or the arrow, the second screen is displayed. This screen shows the cleanings, which have taken place in units (min/m3) and the ones, which have taken place by order of the differential pressure gauge.

The third screen asks whether these data are to be erased.



5.6. CONSULTATION

On pressing the "CON" key the following screen will be displayed.

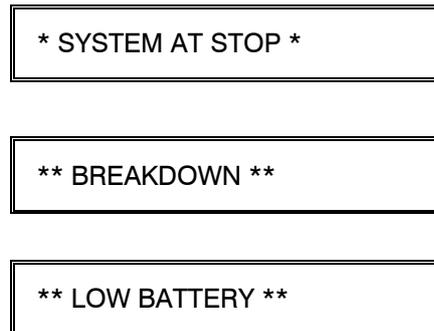
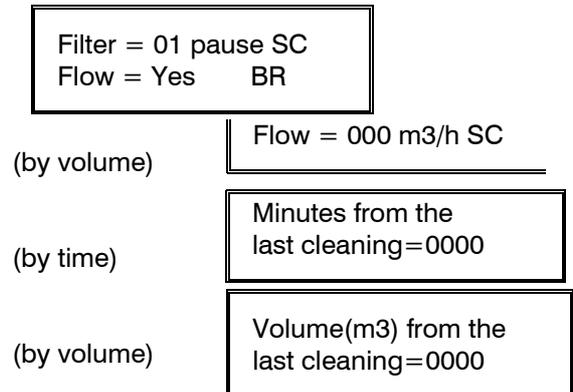
The first screen shows the number of the filter, which is being cleaned, and whether it is at pause between filters.

On the right margins we can see whether the inputs of Start Cleaning (SC) and Breakdown (BR) starts by pressure gauge are activated. Flow is another information. When it is by time it indicates with a Yes/No whether there is water circulation and when it is by volume it shows the instantaneous flow in cubic metres per hour.

The second screen, working with time, shows us how long water has circulated since the last cleaning; and by volume, the circulated cubic metres.

When the unit is stopped because of a breakdown or a manual stop, two screens will be displayed showing it.

Another screen is shown when the battery tension is not enough to activate the valves.



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