HYDRA MT

INSTALLATION MANUAL EN

HANDBUCH DE

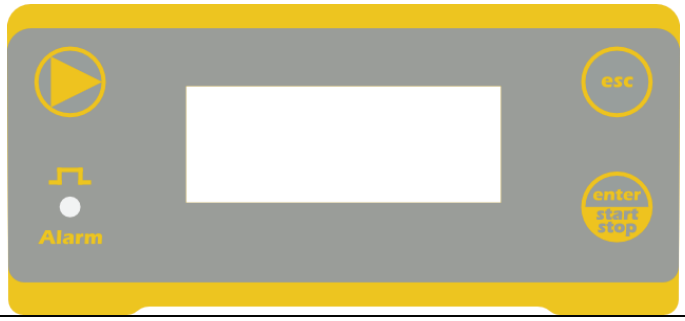
MANUAL DE INSTALACION ES

MANUEL D'INSTALLATION FR

MANUALE D'INSTALLAZIONE IT

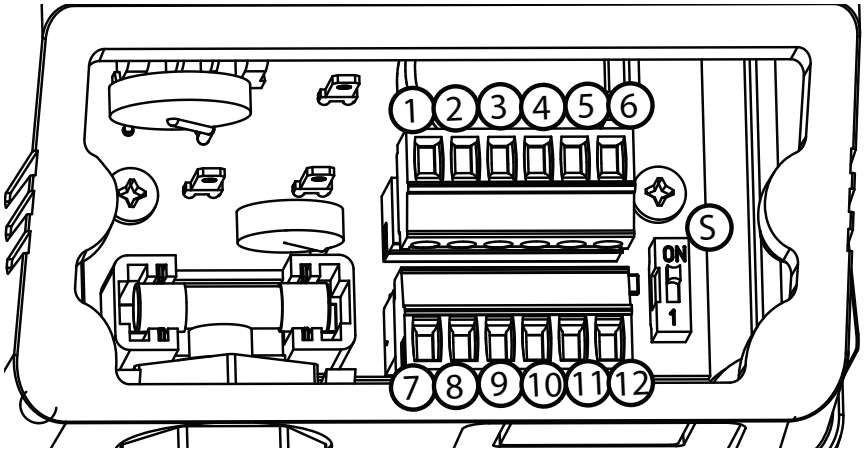
EM00136303 rev.1.0

Control panel – HYDRA MT



enter start stop + esc	To access the programming menu. (Press and hold down simultaneously for at least 3 seconds).
enter start stop	To start and stop the pump. To disable the display notification in case of active level alarm condition (only alarm function), flow alarm condition and memory. In programming mode it functions as “enter”, to confirm the access and the changes within the various menu levels.
esc	To “escape” the various menu levels. Before exiting the programming mode you will be prompted to save the changes. Prolonged pressure displays the screen for the flow sensor calibration. esc + ▶ to change the contrast.
▶	To scroll the menus or change the parameters in programming mode. In Batch, Timer mode, simulating the external trigger can start the dosage. Prolonged pressure enables the priming.
Alarm	Green LED flashes while dosing. Red LED turns on in case of various alarm conditions.

Electrical connections

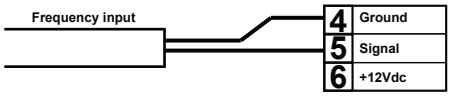


1 2	Flow sensor input	
3	Not used	
4 5 6	- Frequency signal input (water meter pulse-sender) - External trigger input	
7	Pole +	4-20 mA input Input impedance: 200 ohm
8	Pole –	
9 10	- Remote control input (start-stop) - Pause signal input	
11 12	Level control probe input	
S	Dip switch to manage the type of input frequency signal	

Dip switch position and connections for frequency signals input mode

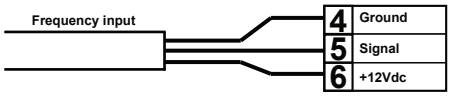
Connection diagram for frequency input with dry contact

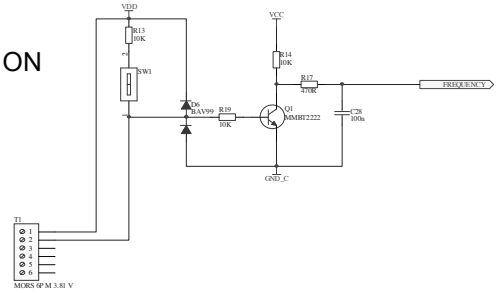
Dip switch position = Position ON



Connection diagram for frequency input with Hall sensor.

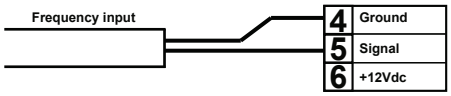
Dip switch position = Position ON





Connection diagram for frequency input with voltage signal

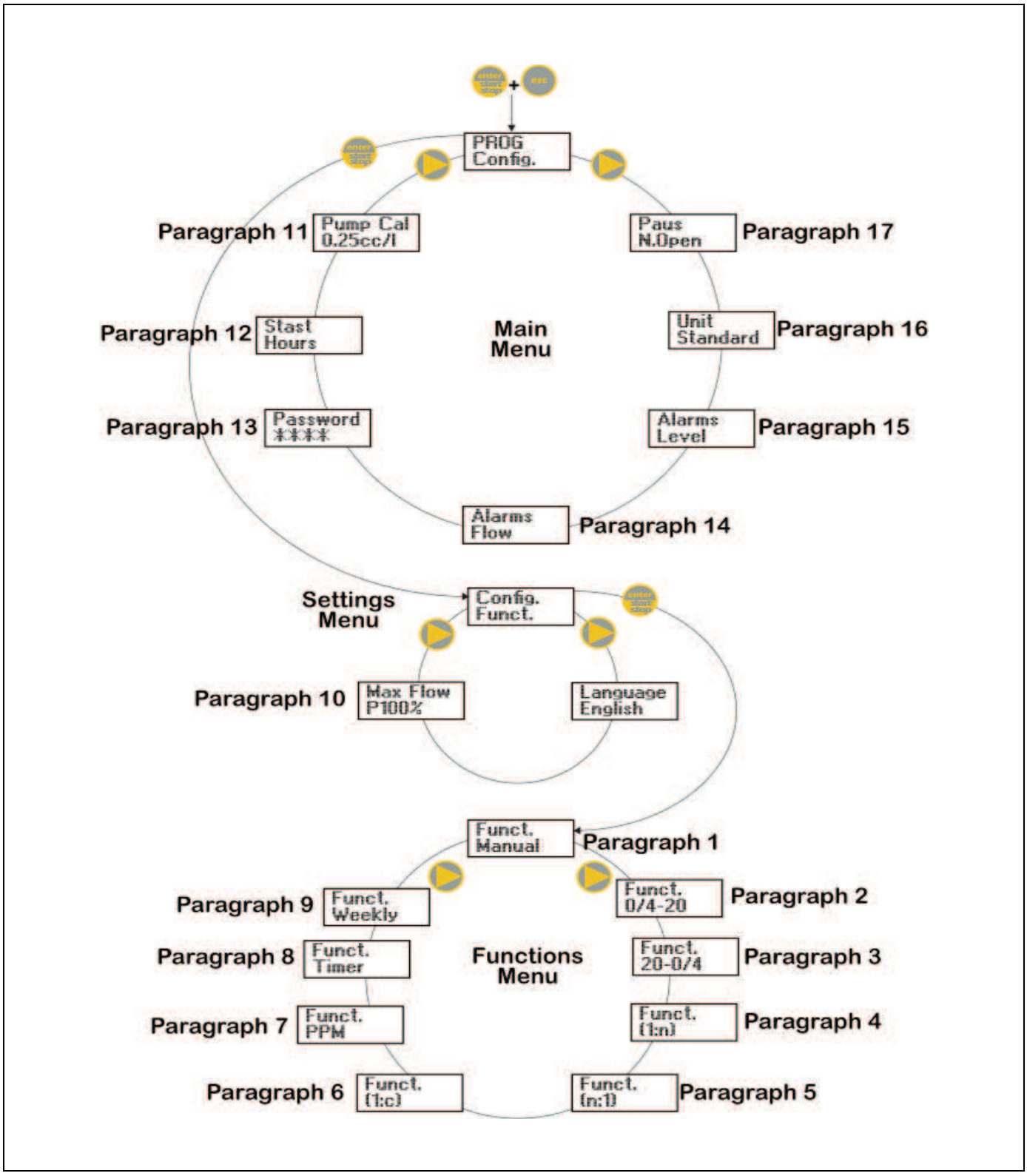
Dip switch position = Position 1



HYDRA MT Programming Menu

Press the enter/start/stop + esc keys for more than three seconds to access the programming mode. Press the ▶ key to scroll the menu items then press the enter/start/stop key to access the options. Whenever a menu item is editable, it flashes. y default, the pump is set for constant mode. The pump automatically returns to operating mode after 1 minute of inactivity. In this case, the data entered will not be saved. Press the esc key to exit the programming levels. When you exit the programming mode, the display shows:

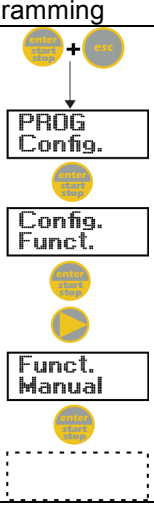
Uscita No Salva ▶ Uscita Salva enter/start/stop to confirm your choice.

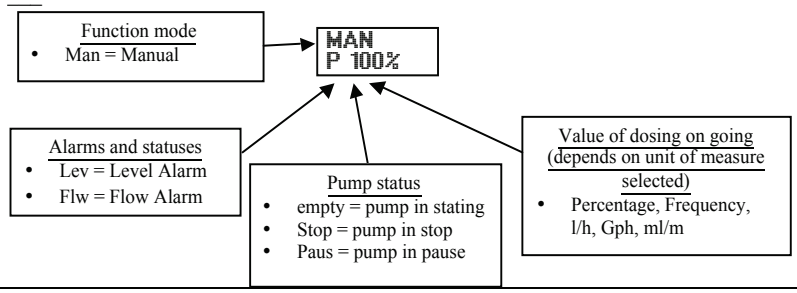


Setting the language

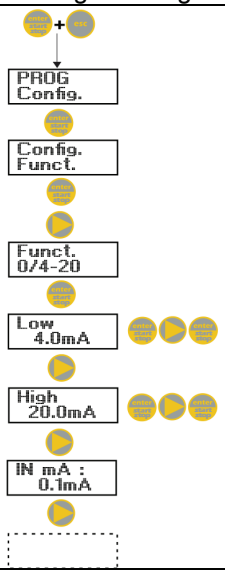
Programming	Operation
	Allows you to set the language. By default the pump is set to English. Press enter start stop to access the item, and then press ▶ to set the language. Press enter start stop to confirm and return to the main menu.

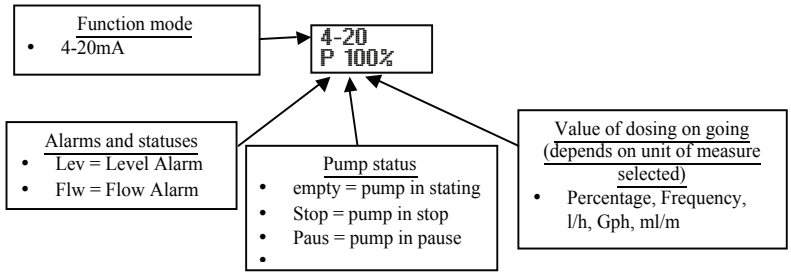
Paragraph 1 – Manual dosage

Programming	Operation
	The pump works in constant mode. The flow rate can be adjusted manually by pressing enter start stop + ▶ simultaneously.

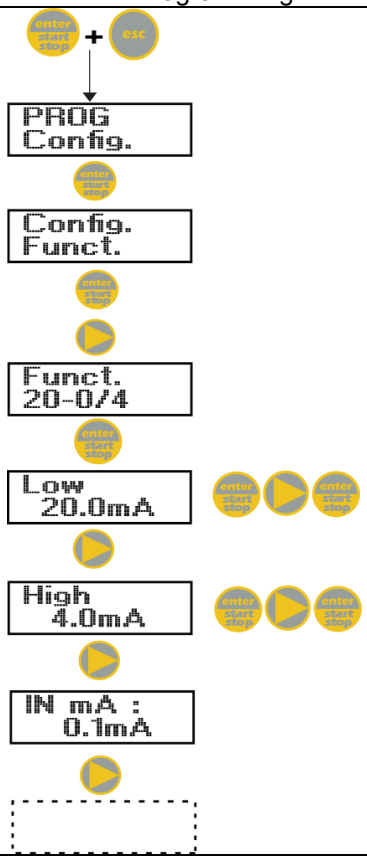
Display during operation


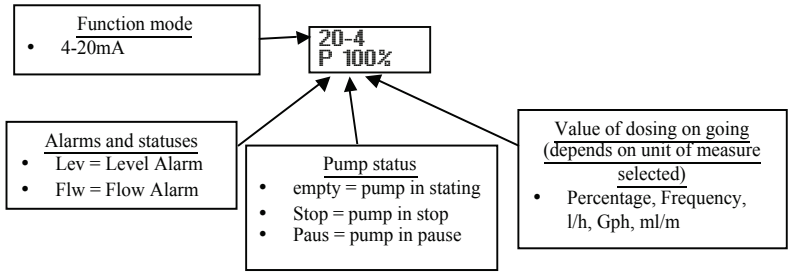
Paragraph 2 – Proportional Dosage to a 0/4-20 mA signal

Programming	Operation
	The pump proportionally doses at a signal of (0)4-20 mA. By default, the pump interrupts the dosage at 4 mA and doses at the maximum set frequency when it receives 20 mA. These two values can be modified during programming. The maximum frequency can be modified during operation by pressing enter start stop + ▶ simultaneously to modify the flow rate. To view the current reading for the mA input, scroll the menu items to **In mA**. For an input signal of less than 0.2 mA the alarm LED turns on to indicate the absence of signal.

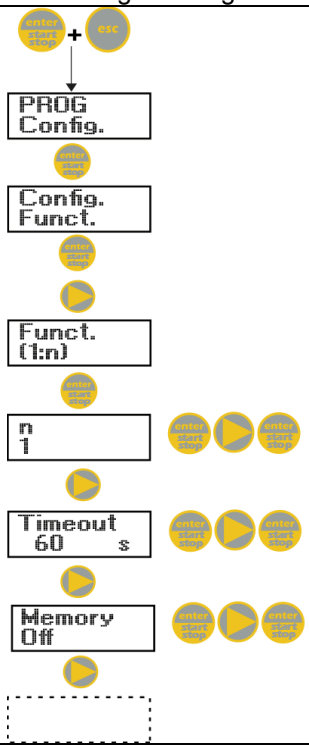
Display during operation


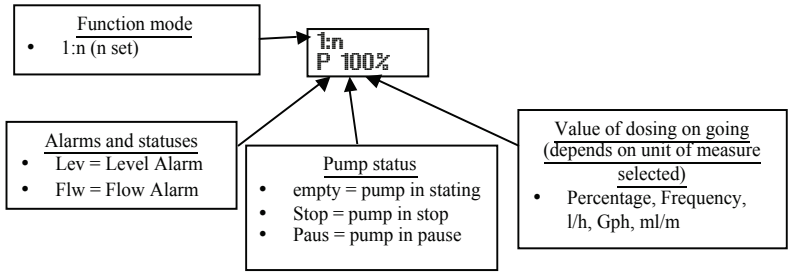
Paragraph 3 – Proportional Dosage to 20-4/0 mA signal

Programming	Operation
	The pump proportionally doses at a signal of 20-4(0) mA. By default, the pump interrupts the dosage at 20 mA and doses at the maximum set frequency when it receives 4 mA. For an input signal of less than the minimum value – 0.2mA (fixed threshold) (Ex. 4-0.2= 3.8mA) the alarm LED turns on to indicate that the minimum value has been exceeded, but the pump continues to dose at the maximum frequency. These two values can be modified during programming. The maximum frequency can be modified during operation by pressing enter start stop + simultaneously to modify the flow rate. To view the current reading for the mA input, scroll the menu items to **In mA**. For an input signal of less than 0.2 mA the alarm LED turns on to indicate the absence of signal and the pump interrupts the dosage.

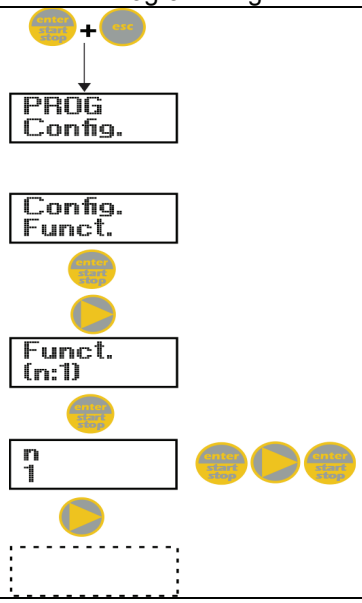
Display during operation


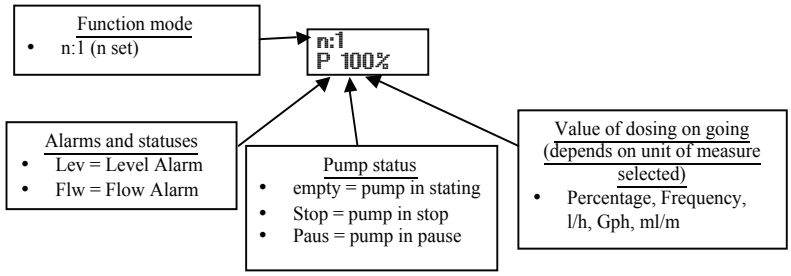
Paragraph 4 – Proportional to External Impulses (multiplication)

Programming	Operation
	The pump doses proportionally to an external signal (ex: water meter pulse-sender). For every signal received, the pump runs the programmed “n” number of strokes. The pump automatically sets the dosage frequency, adapting it to the time that passes between two successive signals. It is possible to set the time (timeout) in seconds, beyond which the pump resets the interval counter in order to avoid dosages over excessively long periods of time. The pump has a memory function which detects the reception of a signal during the dosage. If set to Off, it only detects the signal; if set to On, it detects and memorizes the impulses, then executes them when has finished receiving the signals. The “n” value can be changed during operation by pressing + simultaneously.

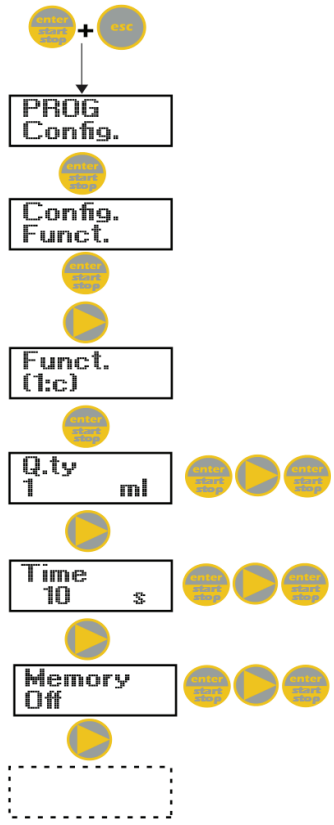
Display during operation


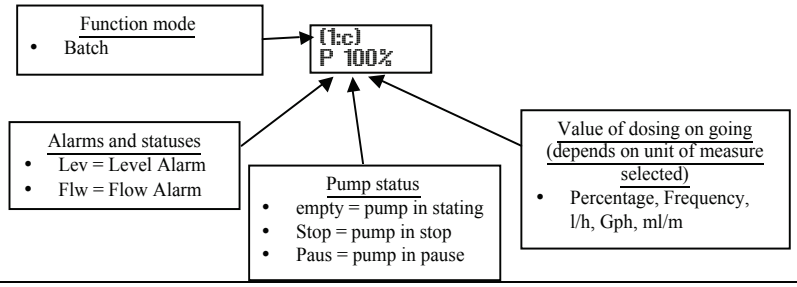
Paragraph 5 – Proportional to External Impulses (division)

Programming	Operation
	The pump doses proportionally to an external signal (ex: water meter pulse-sender). For every “n” signals received, the pump runs a stroke. The “n” value can be set during programming. By programming the “n” value, you set the % of maximum dosage; during operation this value can be modified by pressing + simultaneously.

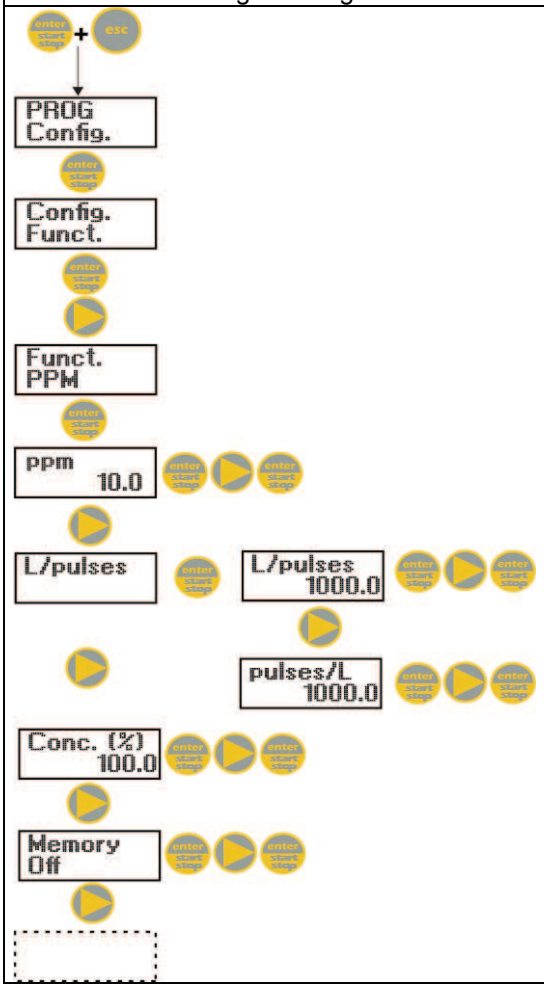
Display during operation


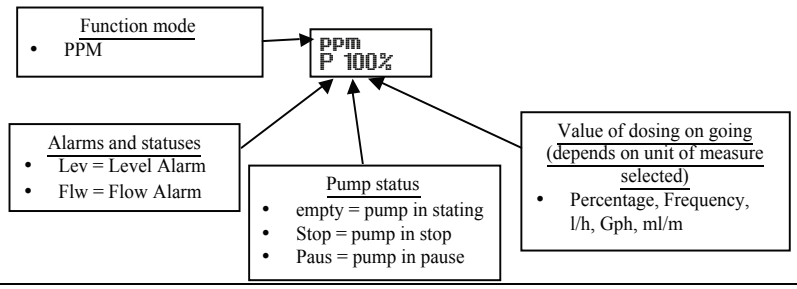
Paragraph 6 – Proportional to External Impulses (batch dosage)

Programming	Operation
	The pump doses proportionally to an external signal (ex: water meter pulse-sender). In this case, you can set the quantity to be dosed in mL and the period of time necessary to complete the dosage. The dosage can be started manually by pressing ▶ or through a remote command. You can press enter start stop to interrupt the dosage. The dosage already made can be reset to zero by pressing ▶ or restarted by pressing enter start stop again. The quantity to be dosed can be modified during operation by pressing enter start stop + ▶ simultaneously to modify the flow rate.

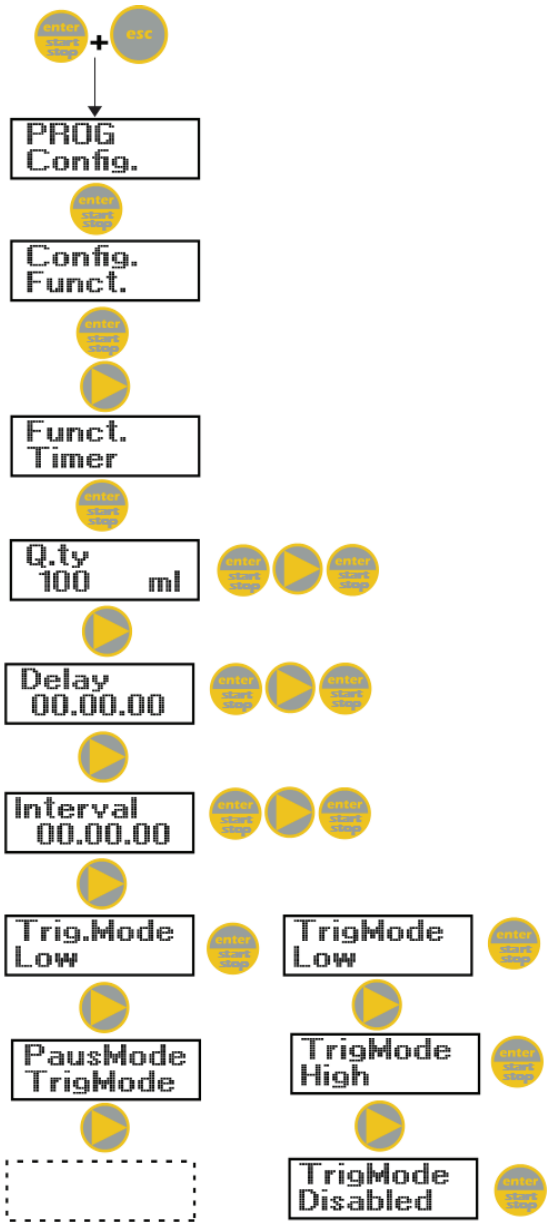
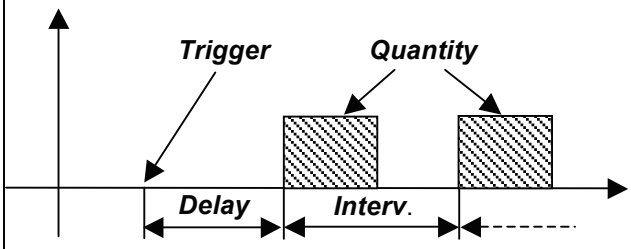
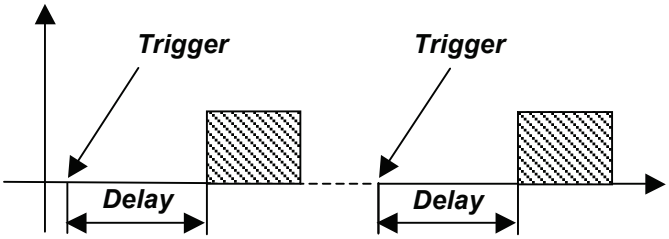
Display during operation


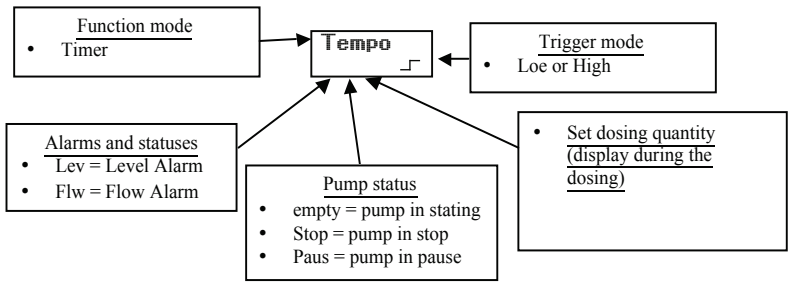
Paragraph 7 – Proportional to External Impulses (ppm dosage)

Programming	Operation
	The pump doses proportionally to an external signal (ex: water meter pulse-sender) by automatically calculating the ratio between the input signals and the pump strokes according to the programmed ppm value. The data to be inserted are the ppm value, the pulses/liter ratio (or liter/pulse) of the counter and the concentration of the product to be dosed. The dosage frequency can be modified during operation by pressing enter start stop + simultaneously.

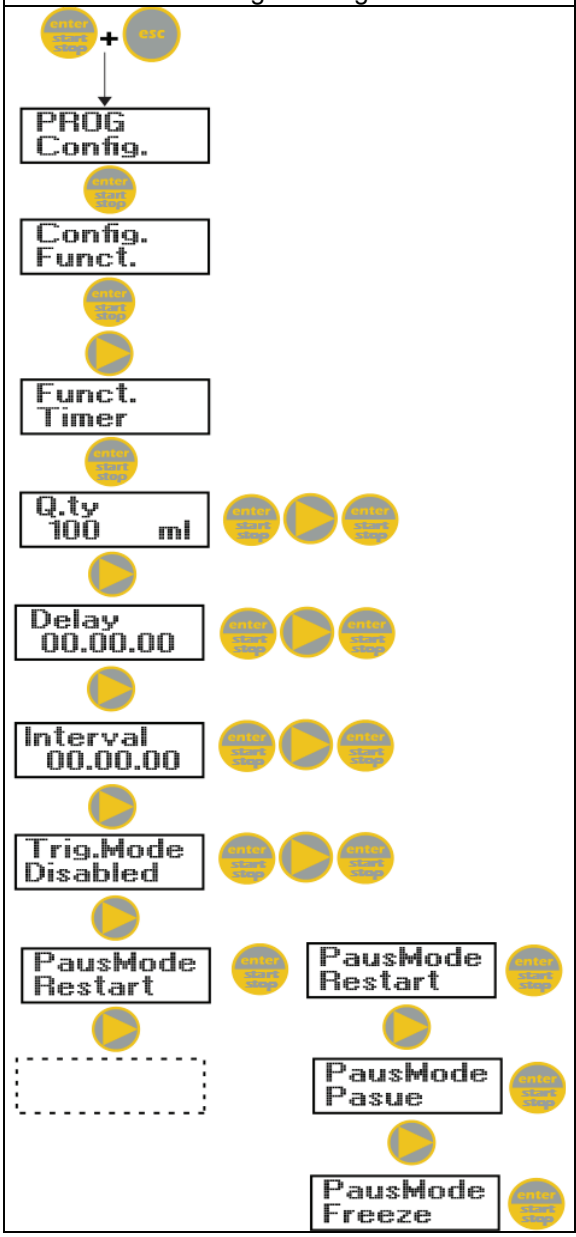
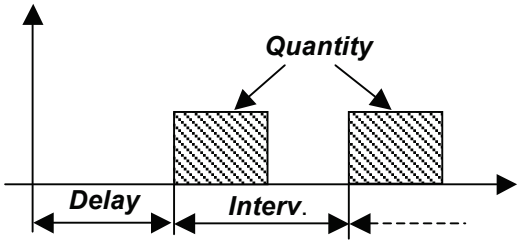
Display during operation


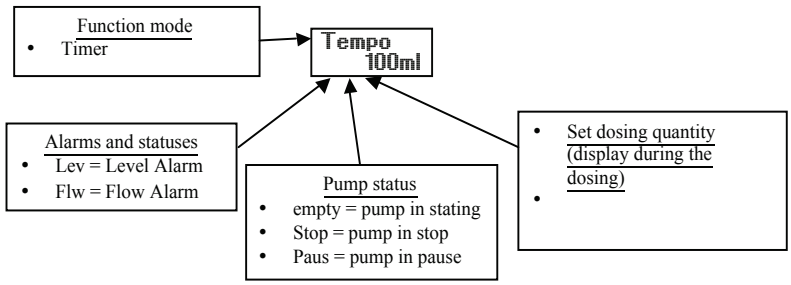
Paragraph 8 – Timed Dosage (***Frequency signal input "TRIGGER" activated)***

Programming	Operation
	After receiving the set ***Trigger*** signal, the pump doses a quantity that can be programmed in mL. It is possible to set a delay time before dosage (***Delay***) and an interval between subsequent dosages (***Interval***) as shown on the diagram:  For example, by setting the interval ***Interv***.= 0 you will get a system in which the programmed quantity is dosed after each ***TRIGGER*** signal (with the eventual delay set):  You can start the dosage by pressing the + key, which practically simulates the ***Trigger*** signal. The ***Trigger*** signal can be set to ***N. Open*** (it is activated when the input is switched from open to closed mode) or to ***N. Closed*** (it is activated when the input is switched from closed to open mode). The ***Trigger*** signal is locked during the dosage (its reception is neither stored nor managed). The ***Pause*** input (***Remote Control***) cannot be programmed and its activation locks the dosage, while the subsequent deactivation makes the system wait for the ***Trigger*** signal for a new dosage. The dosage frequency can be modified during operation by pressing enter/start/stop + ▶ simultaneously.

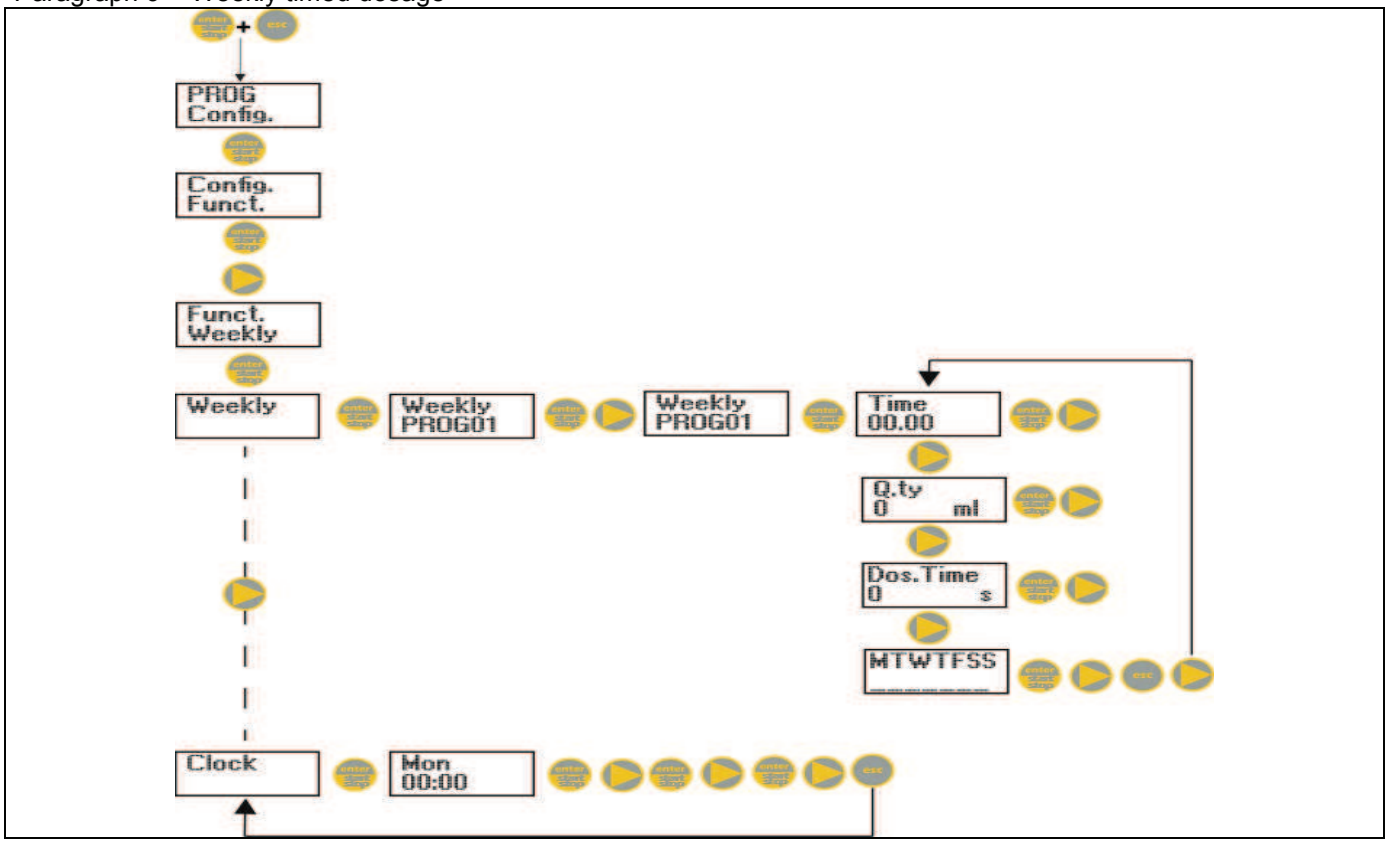
Display during operation


Paragraph 8 – Timed Dosage (***Frequency signal input "TRIGGER" not activated)***

Programming	Operation
	The pump doses a programmed quantity in mL. It is possible to set a delay time (***Delay***) for the pump start up and an interval between subsequent dosages (***Interval***) as shown on the diagram:  The ***Delay*** and ***Interv.*** times are in dd.hh.mm format (days.hours.minutes) The ***Pause*** input can be programmed in three different modes: 1. ***Freeze Time***: with the pause activated, the system stops the current time count and restarts the count when the pause is deactivated 2. ***Pause Dosing***: with the pause activated, the system continues to count the time and stops the dosage. 3. ***Restart Timer***: with the pause activated, the system stops the dosage and when the pause is deactivated the count restarts from the beginning. The dosage frequency can be modified during the pump operation by pressing + simultaneously.

Display during operation


Paragraph 9 – Weekly timed dosage



You can program 10 dosages for the entire week. Press enter start stop from “Weekly Dos.” to enter the programming mode in order to program the dosages.

1) Number of program: press to modify and then press enter start stop to confirm.

2) Dosage schedule: press to modify and then press enter start stop to confirm.

3) Quantity to be dosed: press to set the value in “mL” and then press enter start stop to confirm.

4) Dosing time, i.e. the period of time (in seconds) in which the quantity previously programmed will be dosed: press to set the value in seconds and then press enter start stop to confirm.

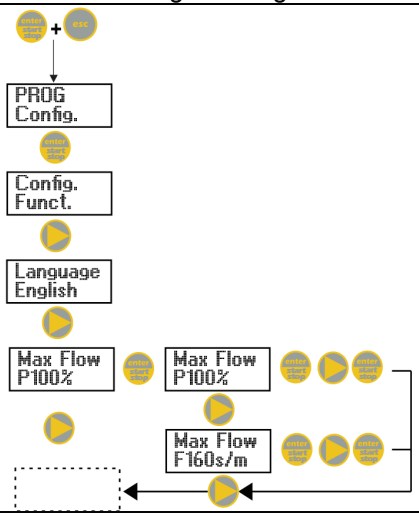
5) Setting the dosage relay: press to modify the values and then press enter start stop to confirm; in “Off” mode the relay does not stay off (open); in “after” mode, the relay is closing when the dosage is activated and stays closed, when the dosage is finished, for a period of time (in seconds) that you can set by pressing the key and then confirm by pressing the enter start stop key. In “before” mode, the relay is closing before the dosage activation time, for a period of time (in seconds) that you can set by pressing the key and then confirm by pressing the enter start stop key.

6) Activation days, i.e. the days in which you want the set program to be active (start time, quantity, dosage time and relay operation mode). Press enter start stop to modify the option, then press to activate/deactivate the dosage, then press enter start stop to change the day of the week. Press enter start stop to confirm and automatically pass to the next program.

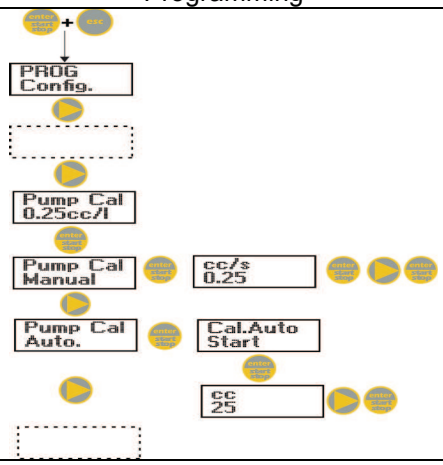
If you need to configure the new program, repeat the above procedure, otherwise press esc to return to the main menu.

On the main menu the next step is to set the clock; press enter start stop to modify the option, then press to set the values and then press enter start stop to confirm. In sequence, you can set the day, the hour and the minute. Of course, the day and the time set are those to which the programming will refer.

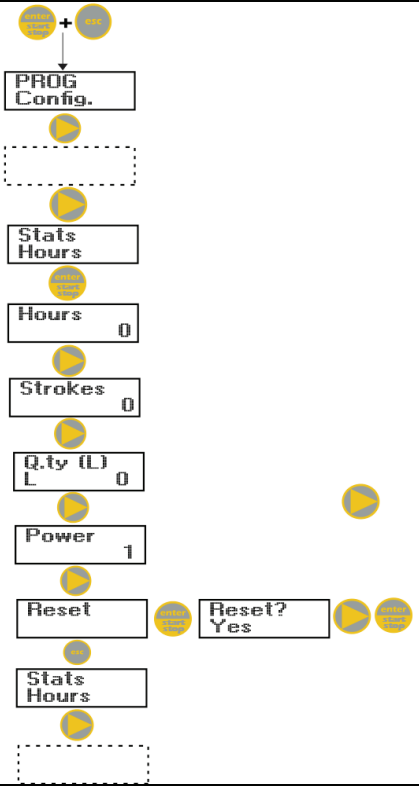
Paragraph 10 – Setting the Maximum Flow Rate

Programming	Operation
	Allows you to set the maximum flow rate of the pump and the programmed mode (% or frequency) is used as the standard measurement unit when displaying the flow rate. Press enter start stop to access the item, and then press ▶ to set the value. Press enter start stop to confirm and return to the main menu.

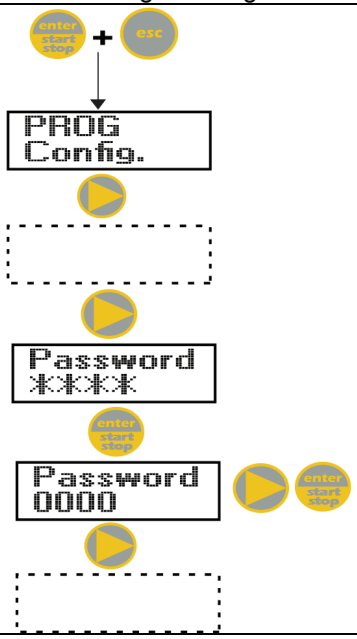
Paragraph 11 – Flow Rate Calibration

Programming	Operation
	On the main menu appears the memorized cc/stroke value. You can perform the calibration in two modes: MANUAL – insert manually the cc/stroke value using the ▶ key and then confirm with the enter start stop key. AUTOMATIC – the pump runs 100 strokes, which are started by pressing the enter start stop key, and at the end of the strokes insert the amount aspirated by pump using the ▶ key and confirm with the enter start stop key. The data entered will be used for the calculation of the flow rates.

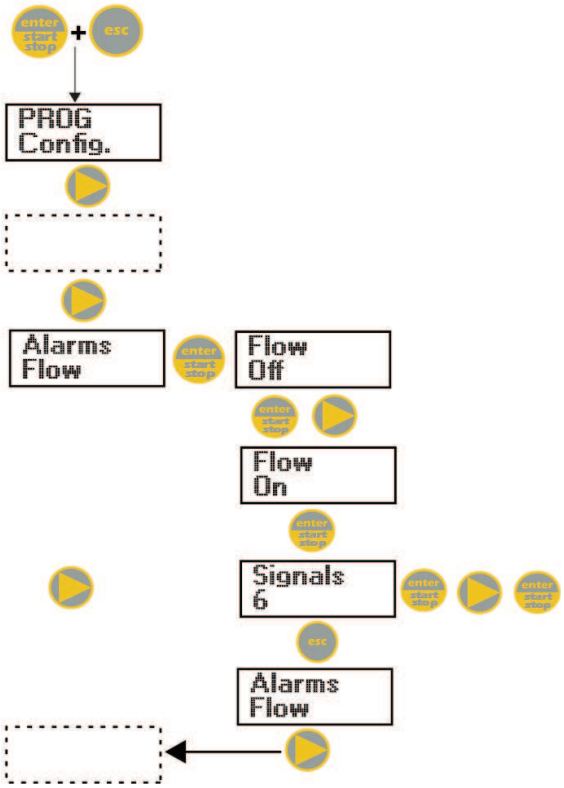
Paragraph 12 – Statistics

Programming	Operation
	On the main menu is displayed, in hours, the operating time of the pump; press enter start stop to access other statistics: - Strokes = the number of strokes performed by the pump - Q.ta (L) = the quantity dosed from the pump expressed in liters; this information is calculated based on the memorized cc/stroke value - Power = the number of pump activations - Reset = press ▶ to reset the counters, select (YES) or (NO), then press enter start stop to confirm. Press esc to return to the main menu.

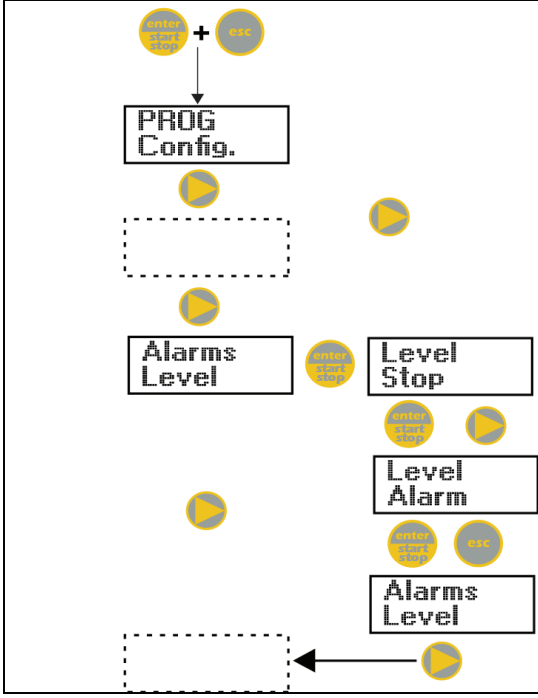
Paragraph 13 – Password

Programming	Operation
	By setting the password, the programming section can be accessed to view all the setup parameters, but every time you try to change the settings you will be prompted for the password. The flashing line indicates the editable number; press to select the number (from 1 to 9), then press to select the number to modify, and then press to confirm. By setting “0000” (default), the password will be eliminated.

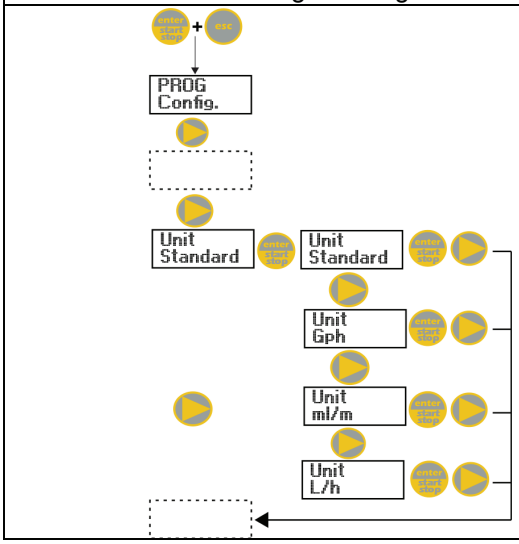
Paragraph 14 – Flow Alarm

Programming	Operation
	Allows you to activate (deactivate) the flow sensor. Once activated (On) by pressing the key, you can set the number of signals the pump requires before starting the alarm (by setting the Time = 0 s on the next menu) or the priming (by setting the Time different from 0 s in the next menu). Press and the number will start to flash, than press to set the value. Press to confirm then press to return to the main menu. In the Time menu you can set the time over which the pump, not having received the flow signal for the set number of signals, will start priming before starting the alarm. If during the priming the pump receives again the flow signal, it will return to normal operation. For the time = 0 s, after the set number of signals, the pump will start immediately the alarm, without performing the priming. To set and modify the time: press and the number will start to flash, than press to set the value. Press to confirm then press to return to the main menu. Only in Batch mode you can activate the Recovery mode. The pump repeats the number of strokes not detected by the flow sensor. Press to access the request of the maximum number of signals that the pump can recover before starting the alarm. Press and the number will start to flash, than press to set the value. Press to confirm then press to return to the main menu.

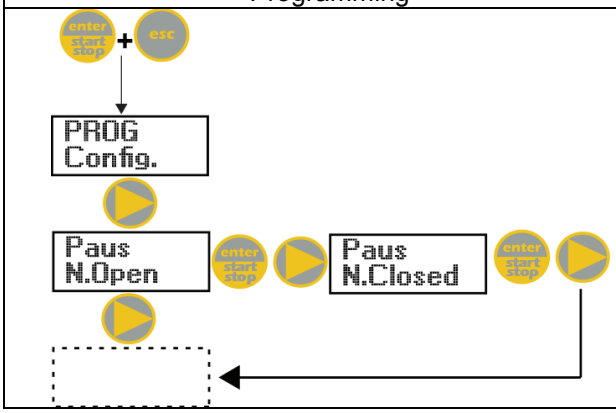
Paragraph 15 – Level Alarm

Programming	Operation
	Allows you to set the pump for the level alarm activation, with dosage operation interruption (Stop), or simple activation of the alarm signal without dosage operation interruption. Press to access the item, then press to set the alarm type. Press to confirm. Press to return to the main menu.

Paragraph 16 – Flow Rate Measurement Unit Display

Programming	Operation
	Allows you to set the measurement unit of the displayed dosage. Press to access the item, then press to set the type of unit, L/h (Liter/hour), Gph (Gallons/hour), mL/m (milliliters/minute) or standard (% or frequency, according to the settings). Press to confirm and return to the main menu.

Paragraph 17 – Setting the Pause

Programming	Operation
	Remote input to pause the pump. By default, the system is set to Normally Open. Press to access the item, and then press to set the value (N. OPEN or N. CLOSED). Press to confirm and return to the main menu.

Alarms

Dislay	Cause	Remedy
Alarm LED on “Lev” icon flashing	End level alarm, without pump operation interruption.	Restore the liquid level.
Alarm LED on “Lev” and “Stop” icons flashing	End level alarm, with pump operation interruption.	Restore the liquid level.
“Mem” icon flashing	The pump receives one or more impulses during the dosage with the memory function set to Off	Press the  key.
“Mem” icon flashing	The pump receives one or more impulses during the dosage with the memory function set to On	When the pump finishes receiving external impulses, it returns the memorized strokes
Alarm LED on “Flw” icon flashing	Flow alarm activated, the pump has not received from the flow sensor the programmed number of signals.	Press the  key.
Parameter Error	Internal CPU communication error.	Press the  key to restore the default parameters.