

HYDRA MT

INSTALLATION MANUAL

EN

HANDBUCH

DE

MANUAL DE INSTALACION

ES

MANUEL D'INSTALLATION

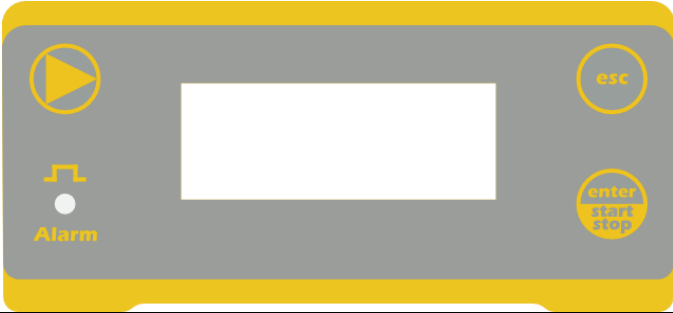
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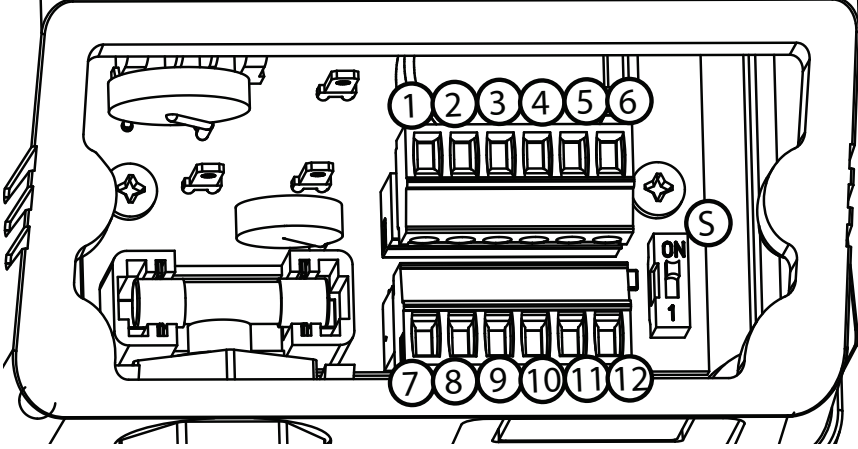
MANUALE D'INSTALLAZIONE

IT

EM00136303

rev.1.0

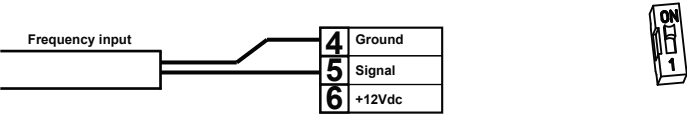
Control panel – HYDRA MT	
	
 + 	To access the programming menu. (Press and hold down simultaneously for at least 3 seconds).
	To start and stop the pump. To disable the display notification in case of active level alarm condition (only alarm function), flow alarm condition and memory. In programming mode it functions as “enter”, to confirm the access and the changes within the various menu levels.
	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.  +  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	
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Flow sensor input	
Not used	
- Frequency signal input (water meter pulse-sender)	
- External trigger input	
Pole +	4-20 mA input Input impedance: 200 ohm
Pole -	
- Remote control input (start-stop)	
- Pause signal input	
Level control probe input	
Dip switch to manage the type of input frequency signal	

Dip switch position and connections for frequency signals input mode

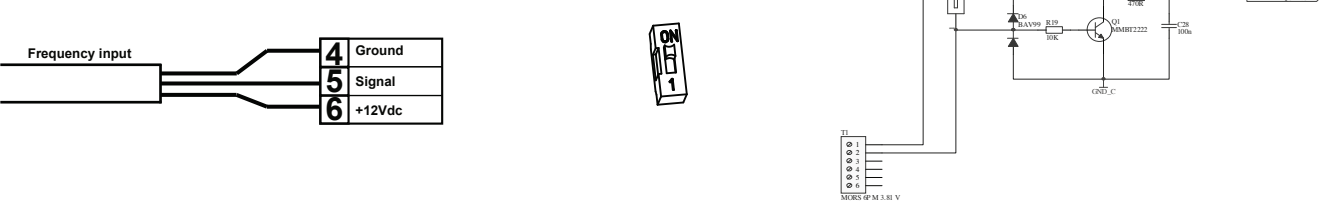
Connection diagram for frequency input with dry contact

Dip switch position = Position ON



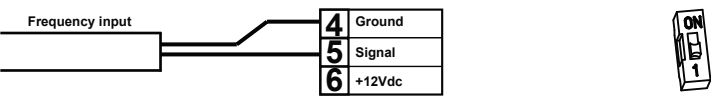
Connection diagram for frequency input with Hall sensor.

Dip switch position = Position ON



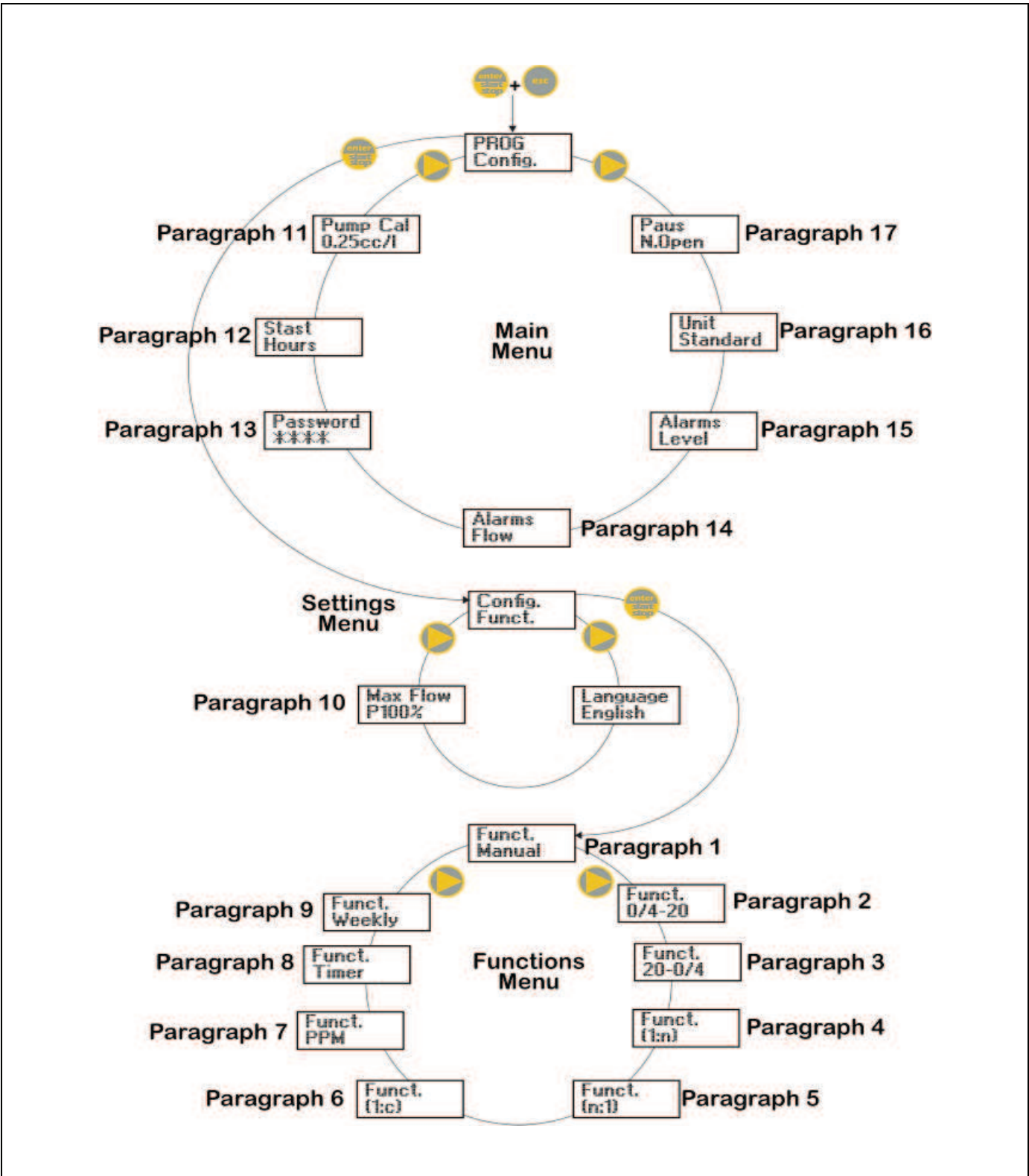
Connection diagram for frequency input with voltage signal

Dip switch position = Position 1

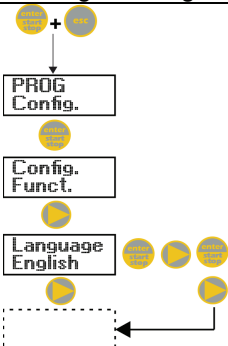


HYDRA MT Programming Menu

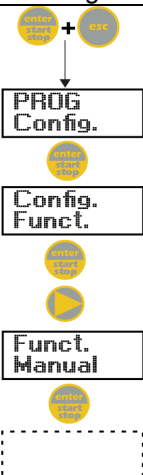
Uscita No Salva  Uscita Salva  to confirm your choice.

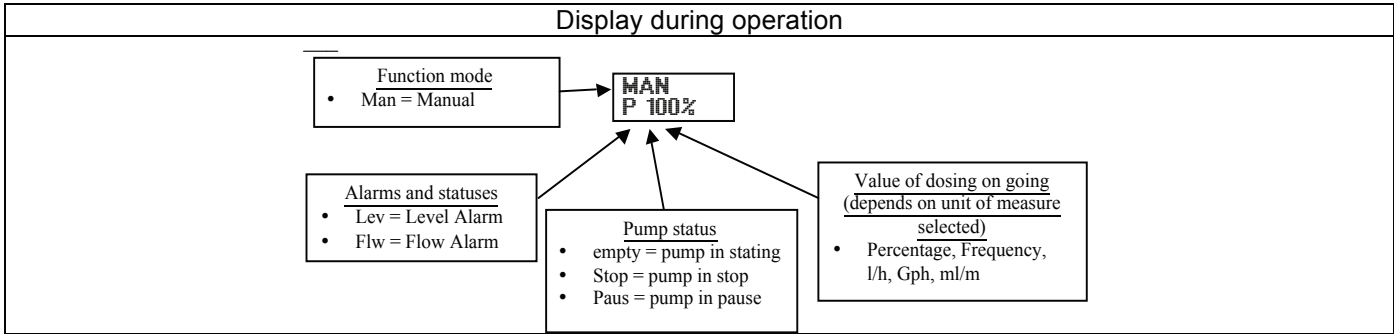


Setting the language

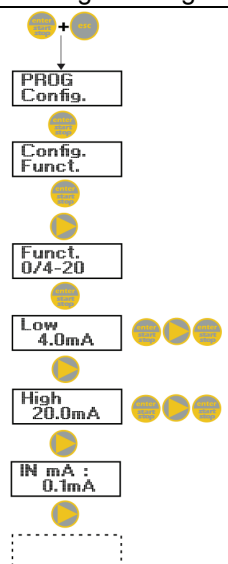
Programming	Operation
	Allows you to set the language. By default the pump is set to English. Press  to access the item, and then press  to set the language. Press  to confirm and return to the main menu.

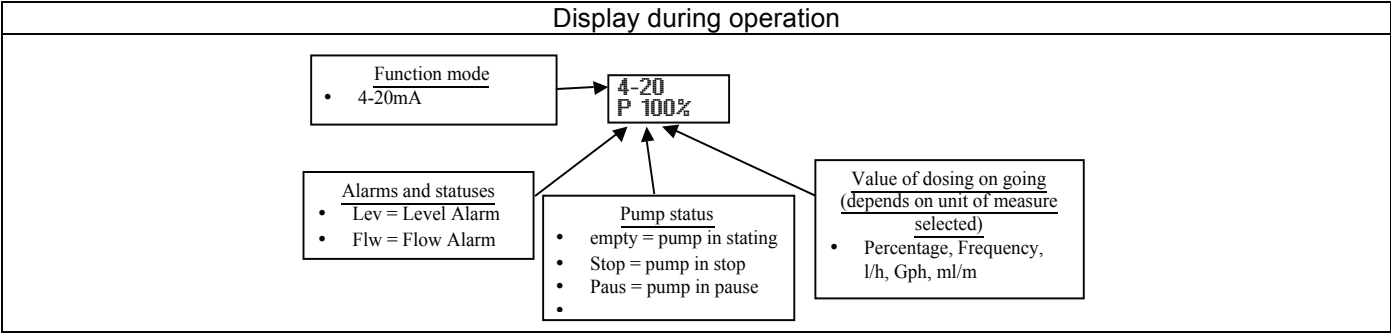
Paragraph 1 – Manual dosage

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



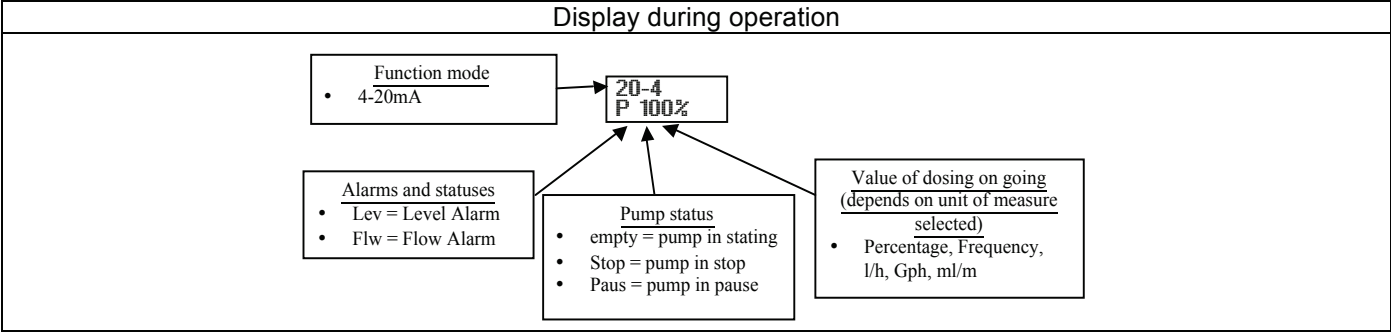
Paragraph 2 – Proportional Dosage to a 0/4-20 mA signal

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  +  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.



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

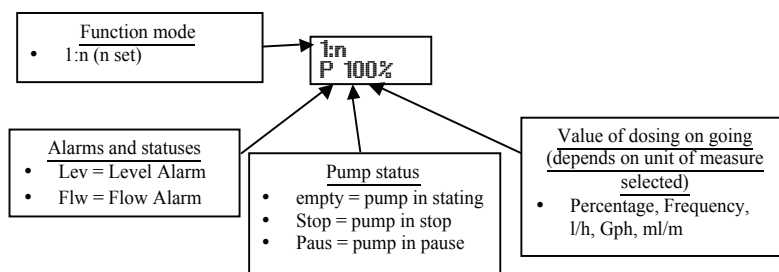
Programming	Operation
ENTER STOP STOP + MAX PROG Config. Config. Funct. Funct. 20-0/4 Low 20.0mA High 4.0mA IN mA : 0.1mA	The pump proportionally doses at a signal of 20-4(0) mA. By default, the pump interrupts the dosage at 20 mA and doses at the maximum set frequency when it receives 4 mA. For an input 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 + 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.



Paragraph 4 – Proportional to External Impulses (multiplication)

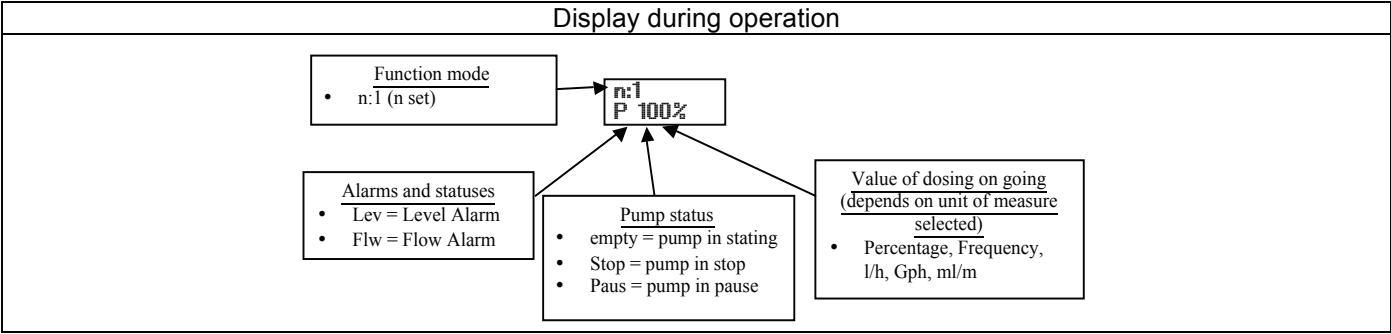
Programming	Operation
	The pump doses proportionally to an external signal (ex: water meter pulse-sender). For every signal received, the pump runs the programmed “n” number of strokes. The pump automatically sets the dosage frequency, adapting it to the time that passes between two successive signals. 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  + .

Display during operation



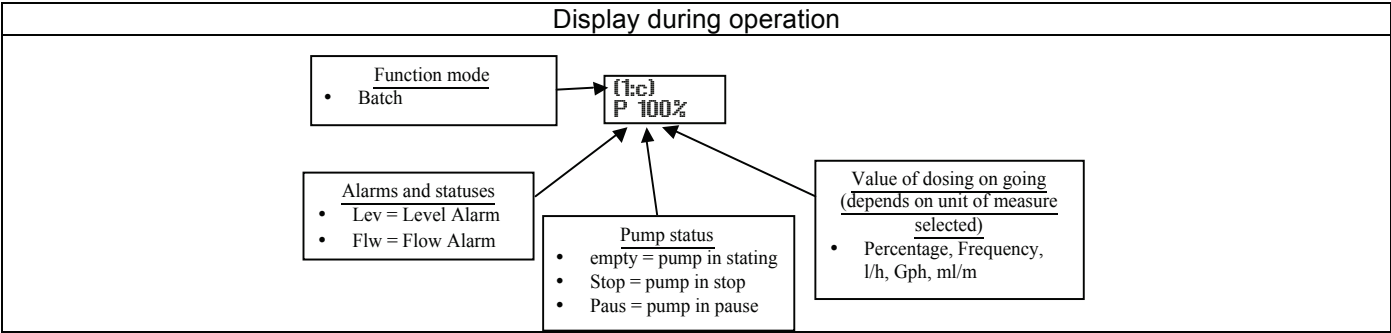
Paragraph 5 – Proportional to External Impulses (division)

Programming	Operation
<pre> graph TD A((Enter start stop + Prog)) --> B[PROG Config.] B --> C[Config. Funct.] C --> D((Enter start stop)) D --> E((Play)) E --> F[Funct. (n:1)] F --> G((Enter start stop)) G --> H[n 1] H --> I((Play)) I --> J[...] </pre>	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.

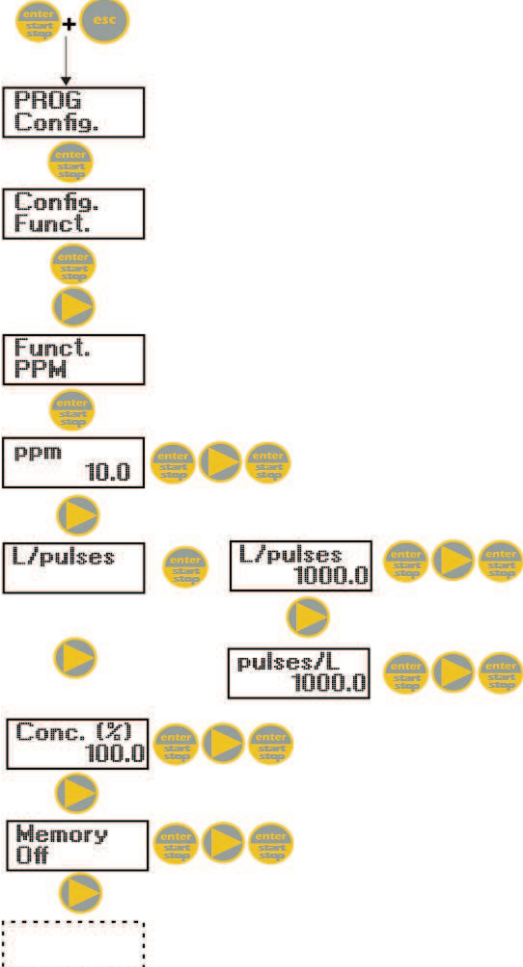


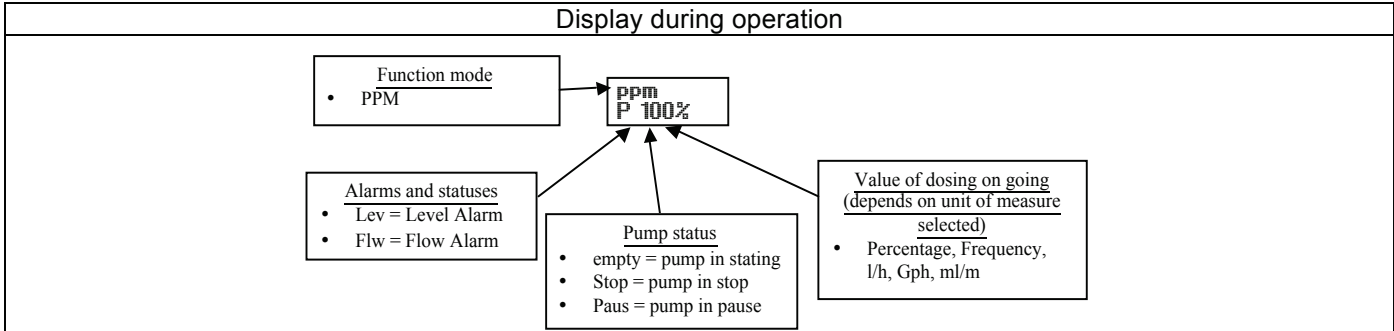
Paragraph 6 – Proportional to External Impulses (batch dosage)

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 to interrupt the dosage. The dosage already made can be reset to zero by pressing or restarted by pressing again. The quantity to be dosed can be modified during operation by pressing + simultaneously to modify the flow rate.



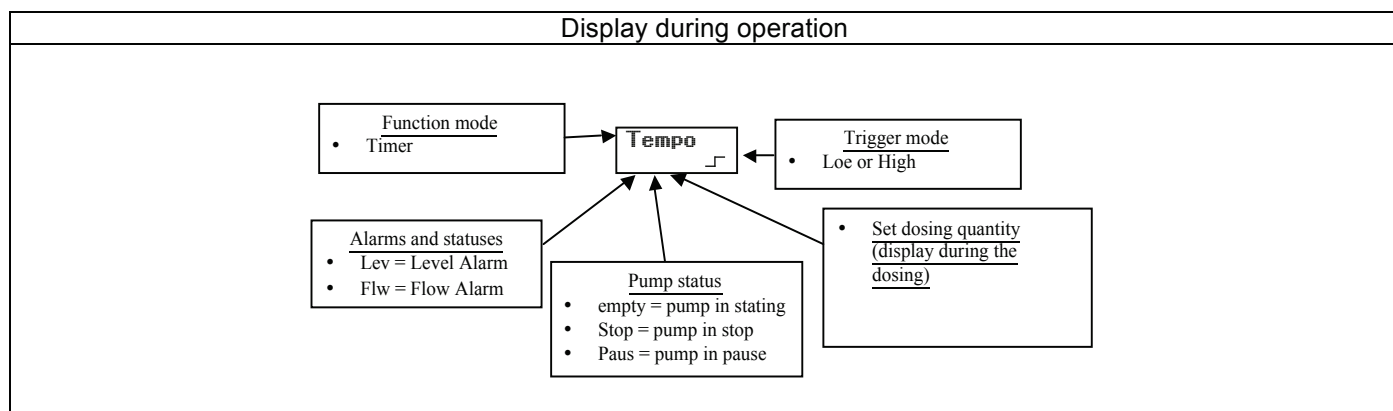
Paragraph 7 – Proportional to External Impulses (ppm dosage)

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  +  simultaneously.

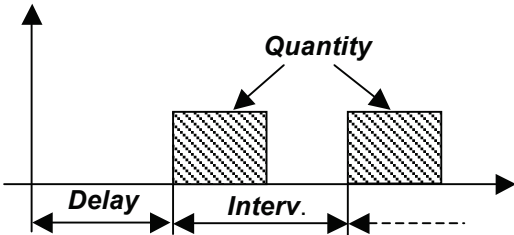


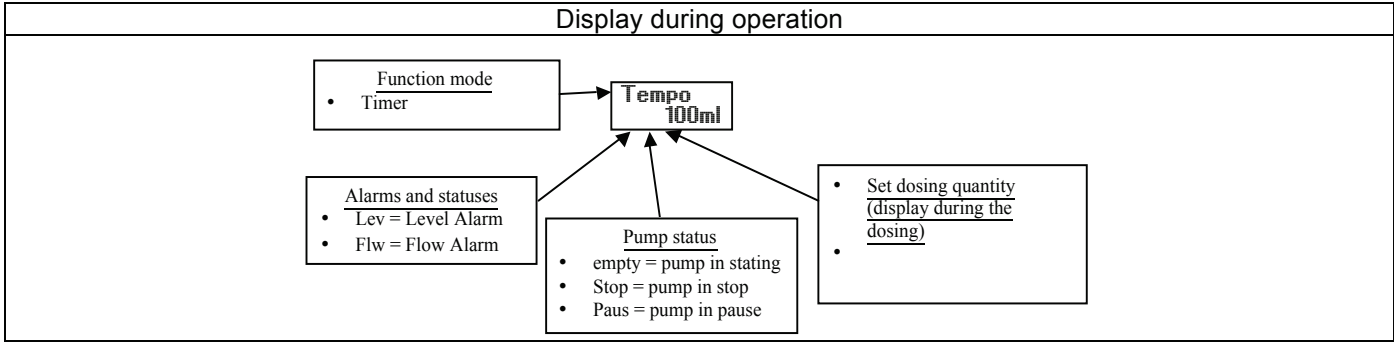
Paragraph 8 – Timed Dosage (*Frequency signal input “TRIGGER” activated*)

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 + simultaneously.

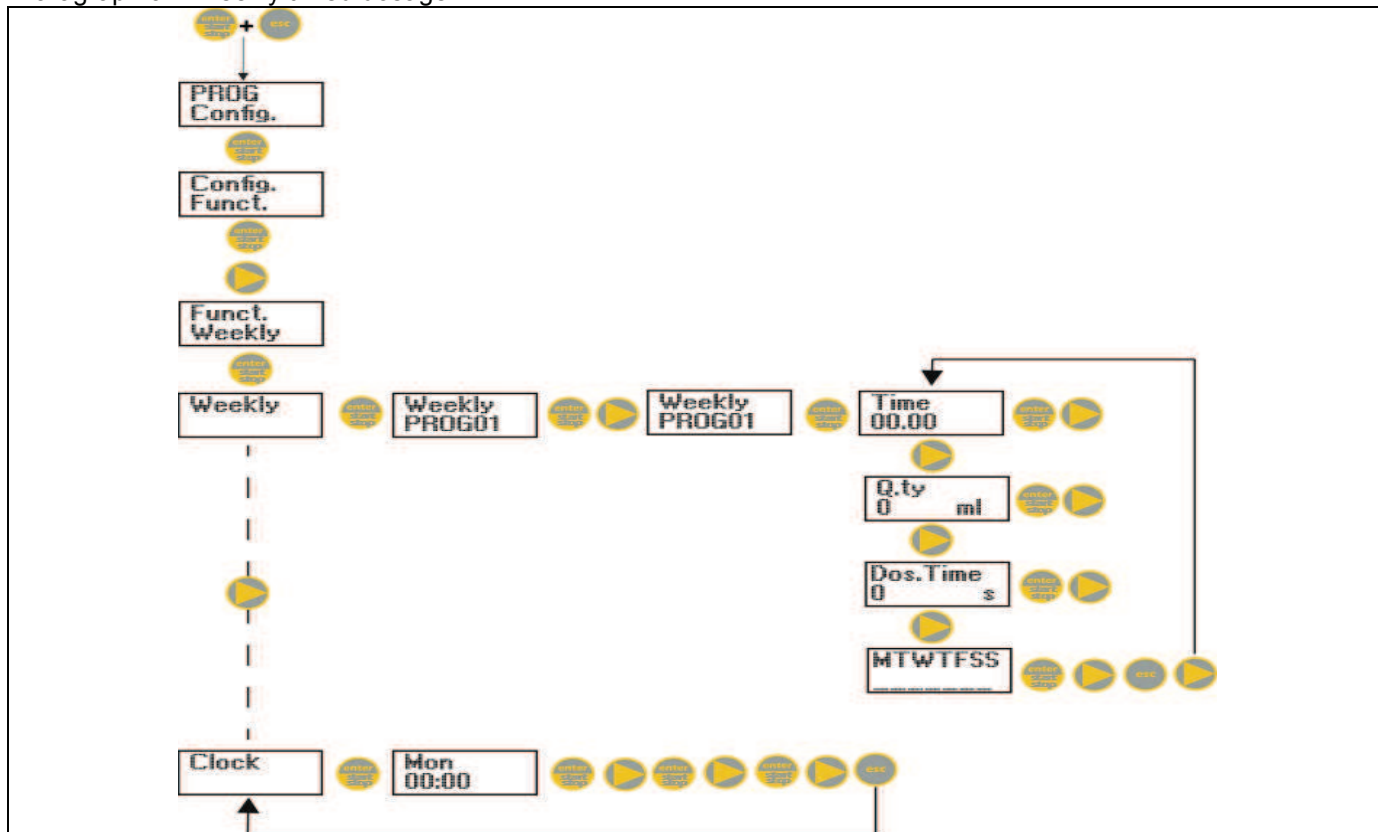


Paragraph 8 – Timed Dosage (**Frequency signal input “TRIGGER” not activated**)

Programming	Operation
ENTER STOP STOP REC + PROG Config. ENTER STOP STOP Config. Func. ENTER STOP STOP ▶ Funct. Timer ENTER STOP STOP Q.ty 100 ml ENTER STOP STOP ▶ ENTER STOP STOP Delay 00.00.00 ▶ ENTER STOP STOP ▶ ENTER STOP STOP Interval 00.00.00 ▶ ENTER STOP STOP ▶ ENTER STOP STOP Trig.Mode Disabled ▶ ENTER STOP STOP ▶ ENTER STOP STOP ▶ PausMode Restart ▶ ENTER STOP STOP ▶ ENTER STOP STOP ▶ ▶ PausMode Restart ▶ ENTER STOP STOP ▶ ENTER STOP STOP ▶ ▶ PausMode Pasue ▶ ENTER STOP STOP ▶ ENTER STOP STOP ▶ ▶ PausMode Freeze ▶ ENTER STOP STOP ▶ ENTER STOP STOP ▶	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 Interval 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 ENTER STOP STOP + ▶ simultaneously.



Paragraph 9 – Weekly timed dosage



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

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

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

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

5) Setting the dosage relay: press  to modify the values and then press  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  key. In “before” mode, the relay is closing before the dosage activation time, for a

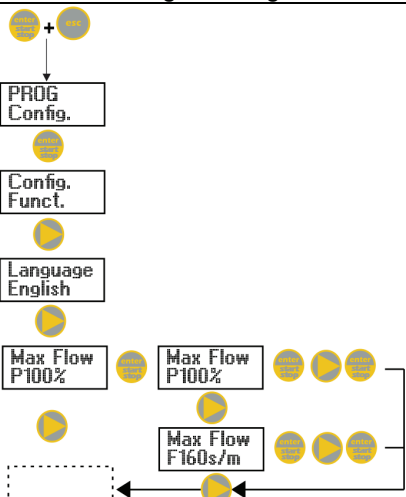
period of time (in seconds) that you can set by pressing the  key and then confirm by pressing the  key.

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  to modify the option, then press  to activate/deactivate the dosage, then press  to change the day of the week. Press  to confirm and automatically pass to the next program.

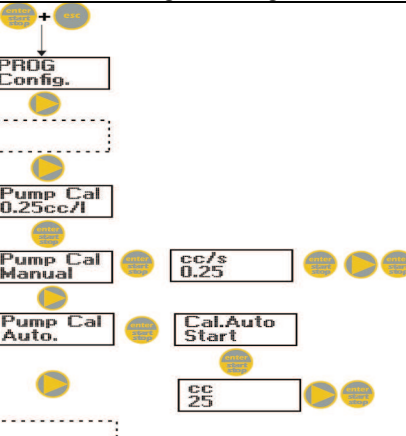
If you need to configure the new program, repeat the above procedure, otherwise press  to return to the main menu.

On the main menu the next step is to set the clock; press  to modify the option, then press  to set the values and then press  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.

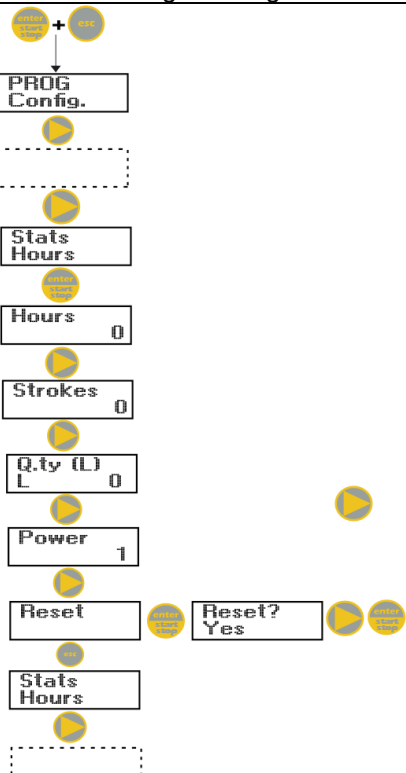
Paragraph 10 – Setting the Maximum Flow Rate

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  to access the item, and then press  to set the value. Press  to confirm and return to the main menu.

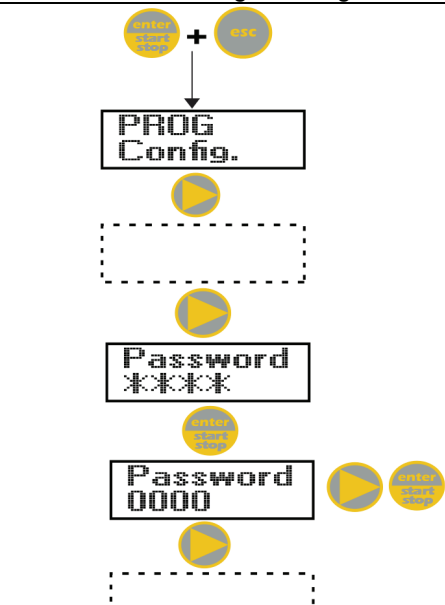
Paragraph 11 – Flow Rate Calibration

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  key. AUTOMATIC – the pump runs 100 strokes, which are started by pressing the  key, and at the end of the strokes insert the amount aspirated by pump using the  key and confirm with the  key. The data entered will be used for the calculation of the flow rates.

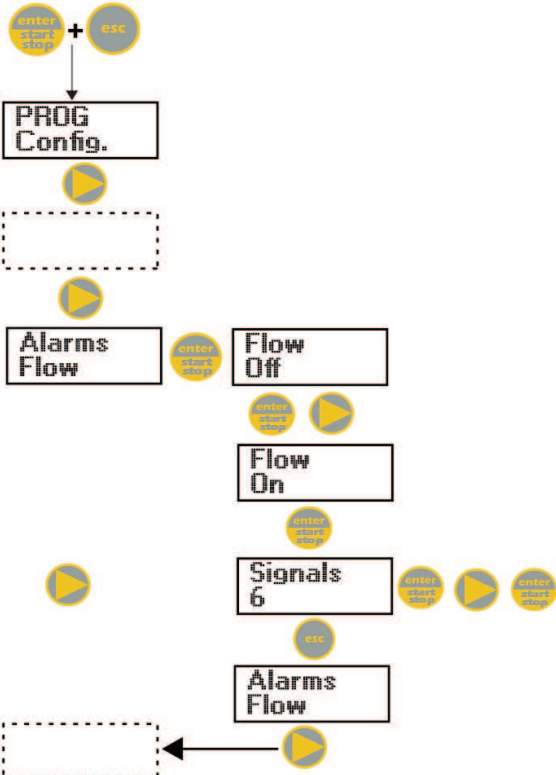
Paragraph 12 – Statistics

Programming	Operation
	On the main menu is displayed, in hours, the operating time of the pump; press  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  to confirm. Press  to return to the main menu.

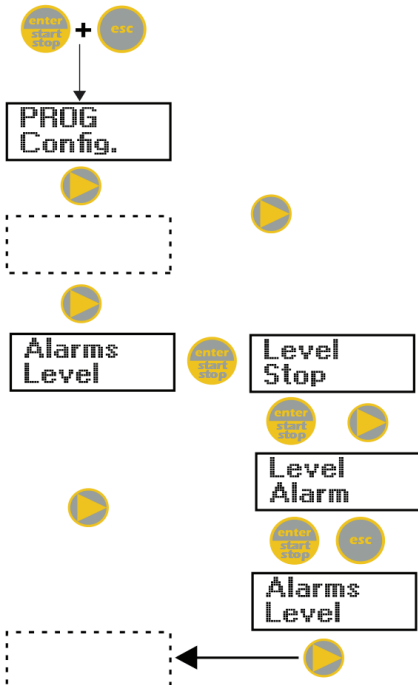
Paragraph 13 – Password

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.

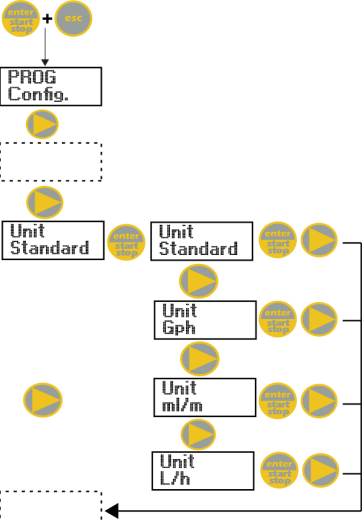
Paragraph 14 – Flow Alarm

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.

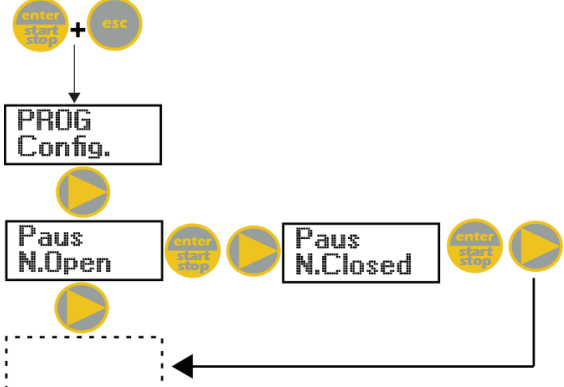
Paragraph 15 – Level Alarm

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.