AES
Automated Environmental Systems

MADE IN ITALY

ENGLISH

POWER BOX EP2

Installation and use manual

Index

Introduction

1.1 PRESENTATION

This manual provides the indispensable information for the installation , use and maintenance of the Power box EP2 rescuer.
The user should read this manual before operating the unit. Improper use may cause damage to the machine and lead to the forfeiture of the warranty coverage. Always specify the model identification code and the construction number when requesting technical information or spare parts from our Sales and Service department. The instruction and warnings given below concern the standard version; refer to the sale contract documentation for modifications and special version characteristics. For instructions, situations and events not considered in this manual or in the sale documents, please contact our customer service.

Our units must be installed in sheltered, well-ventilated, non-hazardous environments and must be used at a maximum temperature of +40°C and minimum of -5°C.

1.2 DESCRIPTION

The Power Box EP 2 rescuer unit is a device specifically designed for operating pumps in presence and without network . It can control one or two pumps with float inputs for clean or waste water and CLC probes .It checks charge and battery wear , it manages , displays and sends alarms (if equipped with GSM).

Atlantic S.r.l.s shall not be liable for any damage caused or suffered by the unit as a result of its unauthorised or improper use.

TECHNICAL FEATURES

Self learning of the motor data; min-max amperage protection (A); dry running protection made by cosφ amd min Amperage; min and max voltage protection (V); phase failure protection; start and stop delay; delay network restore, protection delay, frequency 50-60Hz.

OUTPUT ALARMS AND PROTECTIONS

Acoustic alarm ; , alarm output ; min-max water level ; min -max Voltage ; phase failure ; frequency failure alarm ; min -max motor Amperage;.

1.3 HANDLING

The control panel must be handled with care, as falls and knocks can cause damage without any visible external signs.

PRELIMINARY INSPECTION

After you have removed the external packaging, visually inspect the control panel to make sure it has suffered no damage during shipping.
If any damage is visible, inform an Atlantic dealer as soon as possible, no later then five days from the delivery date.

STORED

If for any reason the unit is not installed and starter immediately after it has reached its destination it must be stored properly. The external packaging and the separately packed accessories must remain intact, and the whole must be protected from the weather, especially from freezing temperatures, and from any knocks or falls.

Warnings

2.1 SAFETY INFORMATION

RISK OF ELECTRIC SHOCK
Failure to follow the instructions in this manual, carries a risk of electric shock.

RISK FOR PEOPLE AND PROPERTY
Failure to follow the prescriptions in this manual, carries a risk of damage to persons and/or property.

WARNING
Failure to observe the prescriptions in this manual, cause damage to the pump, the unit or the system.

2.2 CAUTION

ATTENTION: PUMPS
- Make sure the pumps are fully primed before you start it.
- Make sure the pumps are running with the correct rotation.
- The electric pumps or the motors can start up automatically.

ATTENTION: ELECTRICAL CONNECTION
- The control panel must be connected by a qualified electrician in compliance with the electrical regulations in force.
- The electric pumps or the motors and the panel must be connected to an efficient grounding system in compliance with the electrical regulations locally in force.
- Ground the unit before carrying out any other operation.

ATTENTION: SERVICE
As a general rule, always disconnect the power supply before proceeding to carry out any operation on the electrical or mechanical components of the unit or system.

LINE OF SUPPLY CURRENT

Connect the unit at ground before carrying out any other operation.
The voltage input corresponds to the data written on the panel and on the pump:
- (230V ± 10% 50/60Hz x il EPIC 2D -230)

Make sure that the power-supply-cable can bear the nominal current and connect it to the terminals of the general switch of the control panel. If the cables are exposed, they must be appropriately protected. The line must be protected with an Earth leackage and magnetic switch measured in accordance with the regulations locally in force.

LINE OF MOTOR POWER SUPPLY

The voltage input corresponds to the data written on the motor:
- (230V±10% 50/60Hz single-phase)

Doing some starting make sure that the motor respects the right direction of rotation usually indicated by an arrow printed on the motor.

Installation

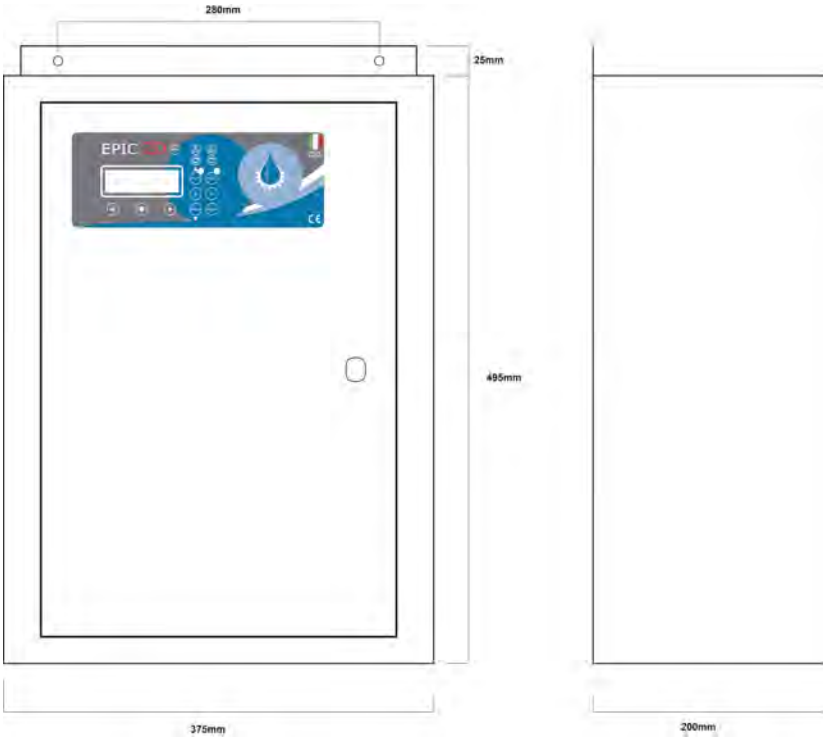
3.1 ASSEMBLING

Fix the panel to a stable support using suitable screws or plugs, using the holes provided at the four corners of the enclosure.

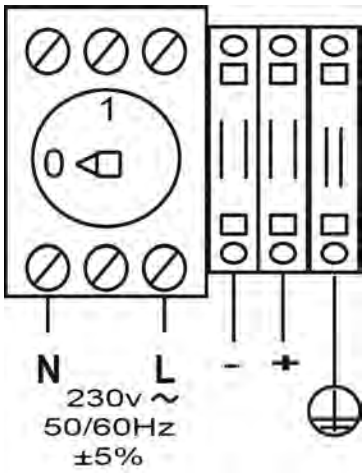
To tighten the cables in the relative terminals , use the tool of the right size to avoid damaging the clamping screws or their seat, if an electric screwdriver is used

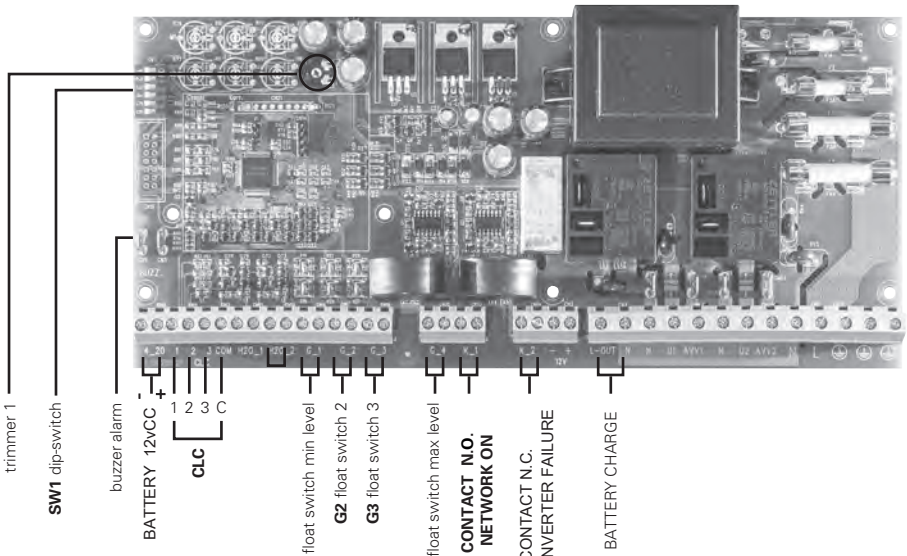
properly dose the tightening clutch to avoid damaging the threads or screws.

After fixing, remove any plastic or metal impurities (eg pieces of copper or plastic shavings) present inside the casing before plugging it.

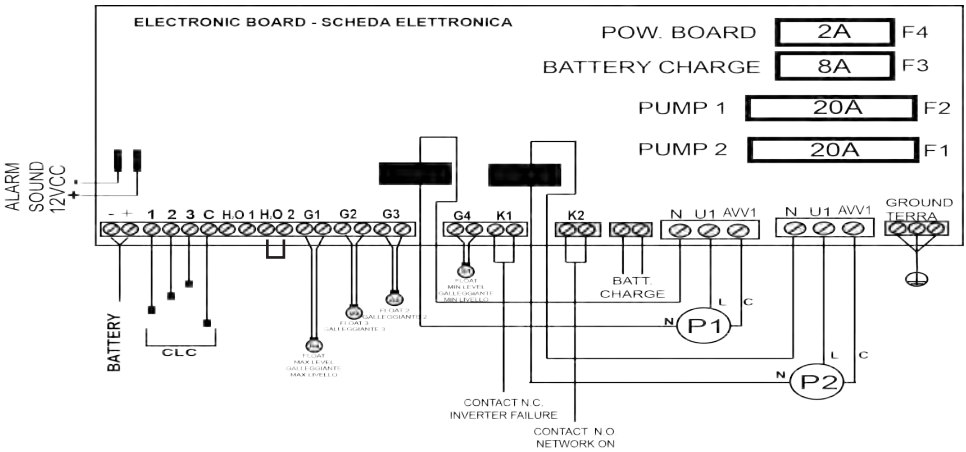


3.2 ELECTRICAL CONNECTIONS





Installation



Operation with 2 pumps

Pressing the AUT P1 / P2 key the panel becomes operational

Operation of only 1 pump in "mains failure" mode

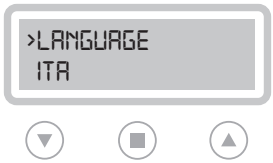
Remove the bridge on H_2O2

Operation with 1 pumps

Pressing the AUT P1 (left) key the panel becomes operational

3.3 ADJUSTMENTS AND SETTINGS (INITIALIZATION)

CONTROL PANEL TURN ON



After making all the electrical connections, switch on the control panel and wait for the initial message to appear on the display.

LANGUAGE SETTING (OBLIGATORY)

Select the display language by scrolling the menu with the appropriate arrows (step 1 and 2).

When completed, press the confirm button (step 3) to continue.

PUMPS TRIGGER

To proceed with self-learning procedure, the pumps must first be triggered.

Do not press confirm, but start the pumps, keeping the "MAN" button pressed (for 3 sec.) for P1 and P2.

Installation

AUTOTUNING (OBLIGATORY)

To start the self-learning of the pump 1 data, type reply (step 5).

For the final confirmation of the data (step 7) type "YES" to go to pump 2, or enter "NO" to go back (to step 5).

Before starting the self-learning procedure, it is necessary to check with a tester that the mains voltage corresponds to the nominal one or at least to the mains voltage.

IMPORTANT!
For each pump, after pressing the final confirmation button, self-learning is no longer possible. To perform the self-learning again it is necessary to access the advanced menu (3.4).

CONTROL PANEL OPERATIVITY

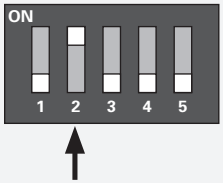
Once the self-learning phase is completed, the display of the panel displays the data learned.

By pressing the "AUT" button P1 / P2 the panel becomes operational.

PRESET PARAMETERS	
LANGUAGE: selected	**ALTERNATION P1/P2:** on
TURN ON DELAY: 2 sec.	**OPERATION:** emptying
MANUAL KEY: unstable	**TYPE:** potable
START DELAY: 4 sec.	**SELF HOLDING:** on
STOP DELAY: 1 sec.	

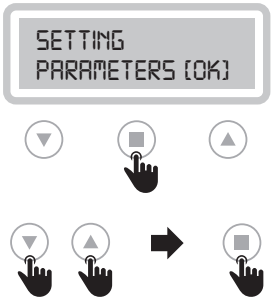
3.4 ADJUSTMENTS AND SETTINGS (ADVANCED MENU)

ACCESS TO ADVANCED MENU



DIP-SWITCH 2

The control panel is set as standard with the dip-switch 2 in the "OFF" position. To access the "ADVANCED MENU" and modify the various parameters, **switch off the control panel and set dip-switch 2 to "ON"**. Then turn the control panel back on to display the message on the "ADVANCED MENU" on the display.

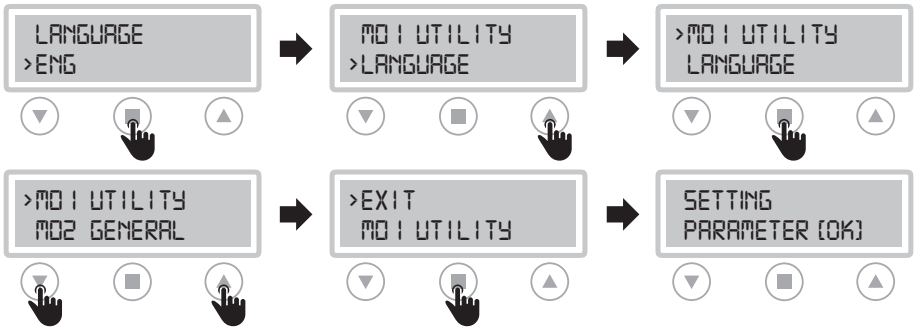


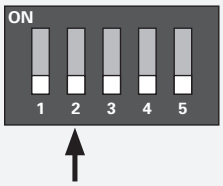
SETTING PARAMETERS

To access the advanced menu and set the various parameters, enter confirmation. On the display will appear in cascade all the fuctions. To enter each individual function, select it with the arrows and enter the confirmation button.

EXIT
M01 UTILITY
M02 GENERAL
M03 NET CONTROL
M04 PUMP 1
M05 PUMP 2
M06 PROGRAM
M07 SENSOR
M08 TIMER
EXIT

CONFIRM MODIFICATIONS AND EXIT FROM ADVANCED MENU (EXAMPLE)





DIP-SWITCH 2

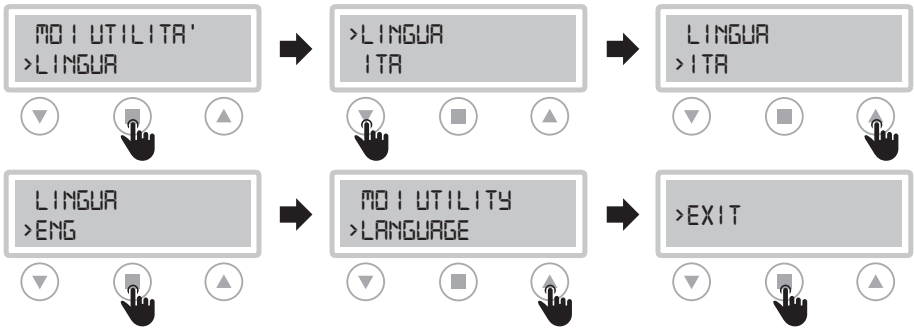
Once the setting of the various parameters has been confirmed (for example the LANGUAGE parameter), to exit the "ADVANCED MENU" **bring the dip-switch 2 back to the "OFF" position**.

Installation

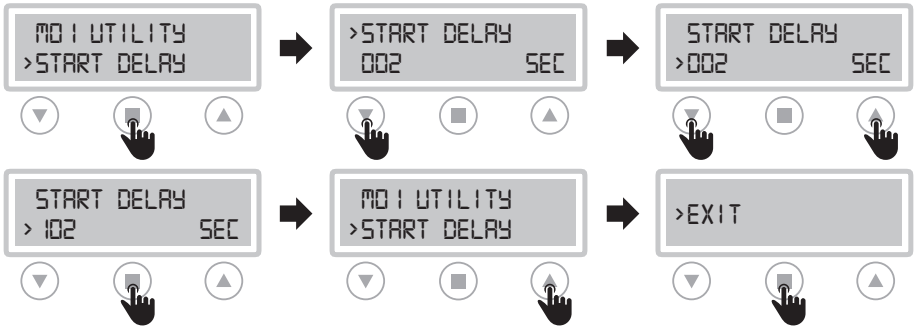
M01 UTILITY

ACCESS TO FUNCTION	MODIFIED PARAMETERS
	**LANGUAGE** Language selection **START DELAY** Control panel switch-on delay after restart (in sec.) **MANUAL KEYPAD** Possibility of operating the "MAN" button in stable or unstable mode (ON: stable / OFF: unstable) **MAX LEVEL ALARM DELAY** Possibility to delay 15 minutes. (not modifiable) the maximum level alarm. The display will show the alarm and the pumps will start (if availables), only the alarm relay and the buzzer will be delayed.

CHANGE LANGUAGE

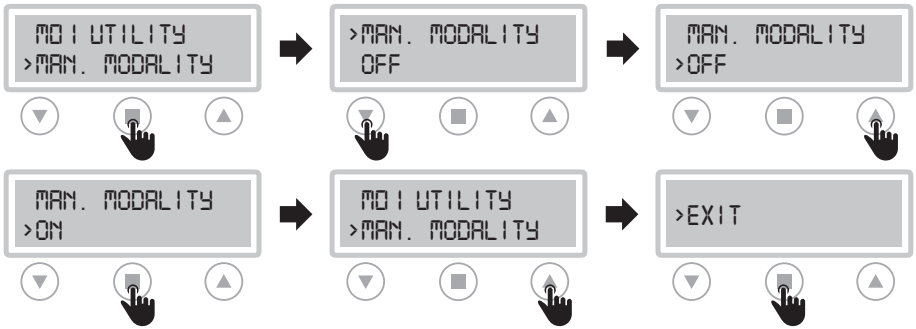


CHANGE START DELAY

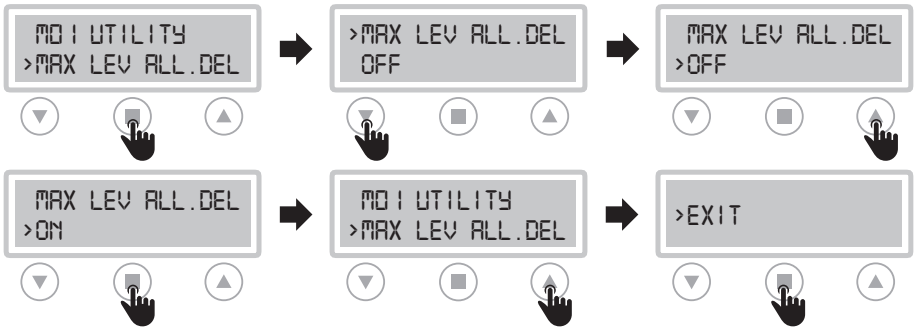


Installation

CHANGE “MAN” BUTTON (STABLE/UNSTABILE)



CHANGE MAX LEVEL ALARM DELAY

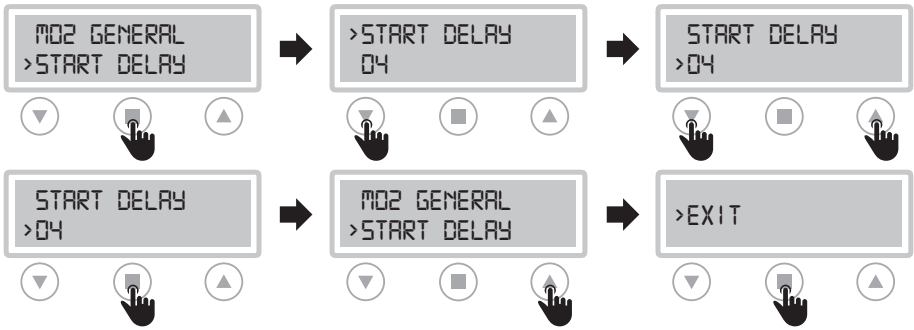


Installation

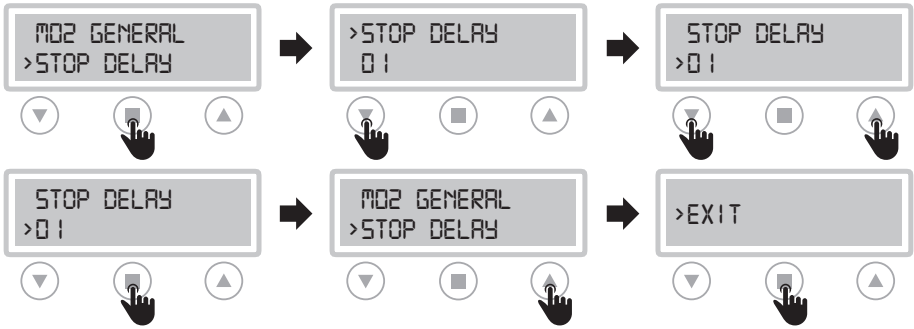
M02 GENERAL

ACCESS TO FUNCTION	MODIFIED PARAMETERS
	**PUMP START DELAY** Set the pump start delay **PUMP STOP DELAY** Set the pump stop delay **PUMPS ALTERNATION** Set the pumps alternation **TIME ON MAX** Max continuous operation of the pump. Received consent from the level control, the pump switches on and operates for a maximum duration set by the user (in min.) The parameter is not active if the value is 0 min.

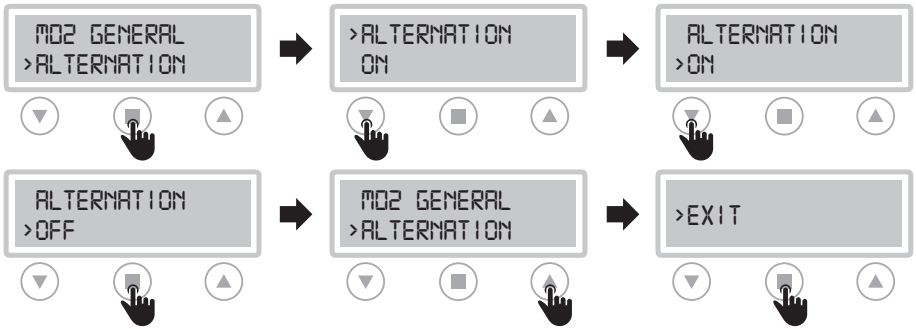
CHANGE START DELAY



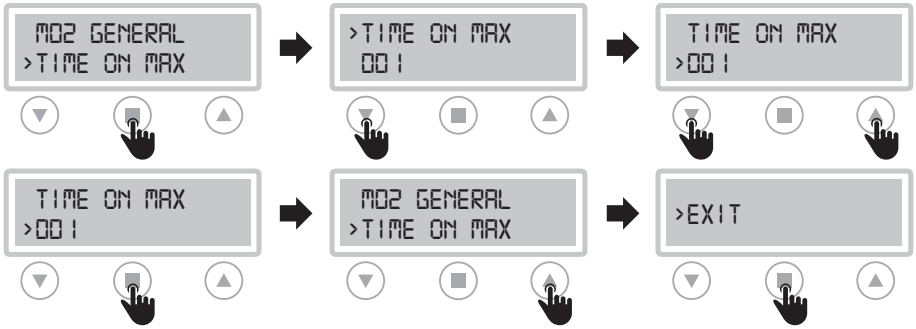
CHANGE STOP DELAY



CHANGE PUMPS ALTERNATION



CHANGE TIME ON MAX



"TIME ON MAX" PROCEDURE

For a correct functioning of this parameter, perform the following procedure:

- set the pump alternation in "ON"
- set the "STARTING FOR HOURS" parameter from the M04 PUMP 1 menu and then M05 PUMP 2 (see page 18), by entering the maximum number of starts allowed for each pump.

ATTENTION!

Refer to chapter 4.2 ALARMS for displaying and managing alarms and reset for this parameter.

EXAMPLE OF OPERATION

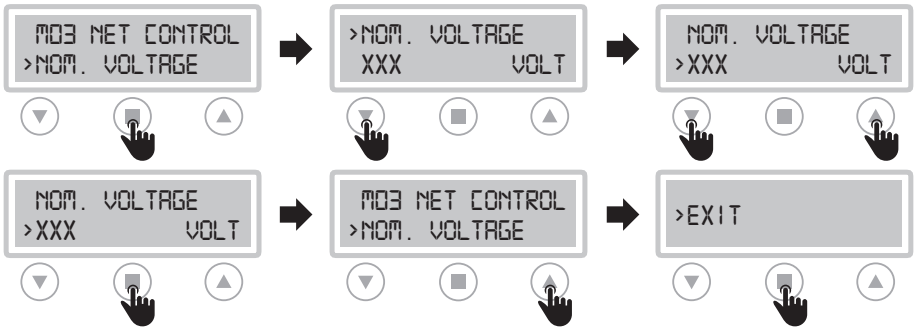
Operation of the control panel with "TIME ON MAX" active:

- the pump 1 activates after the buoyant consent, operates continuously and exceeds the max limit of min. set by the user.
- the control panel stops the pump 1 and starts the pump 2 automatically.
- when the same condition occurs again, the control panel stops the pump 2 and restarts the pump 1
- after a certain number of restarts, the control panel blocks both pumps

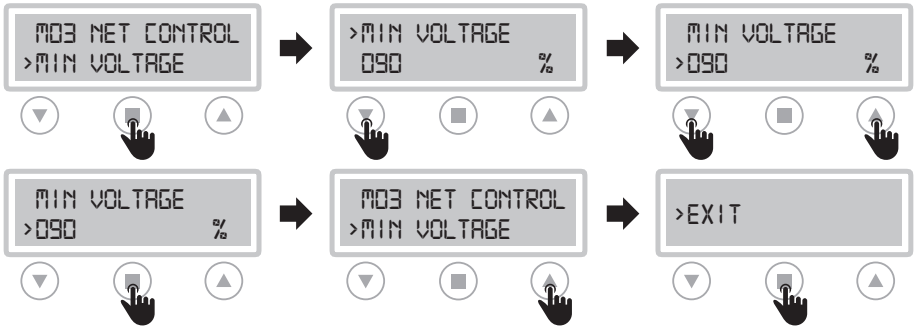
M03 NET CONTROL

ACCESS TO FUNCTION	MODIFIED PARAMETERS
	**NOMINAL VOLTAGE** Set the nominal voltage **MINIMUM VOLTAGE** Set the minimum voltage **MAXIMUM VOLTAGE** Set the maximum voltage **NOMINAL FREQUENCY** Set the nominal frequency **FREQUENCY RANGE** Set the frequency range

CHANGE NOMINAL VOLTAGE

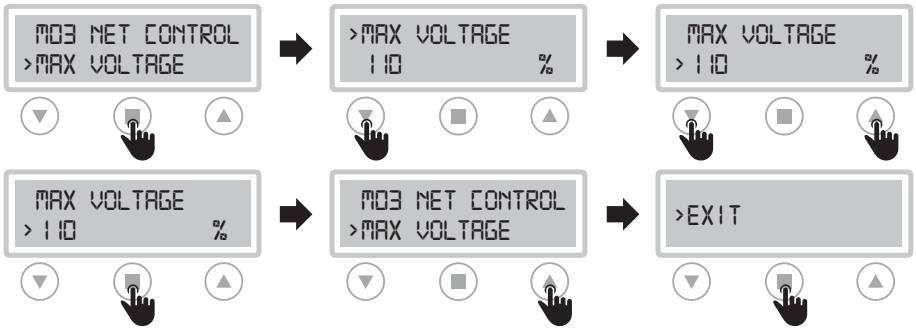


CHANGE MINIMUM VOLTAGE

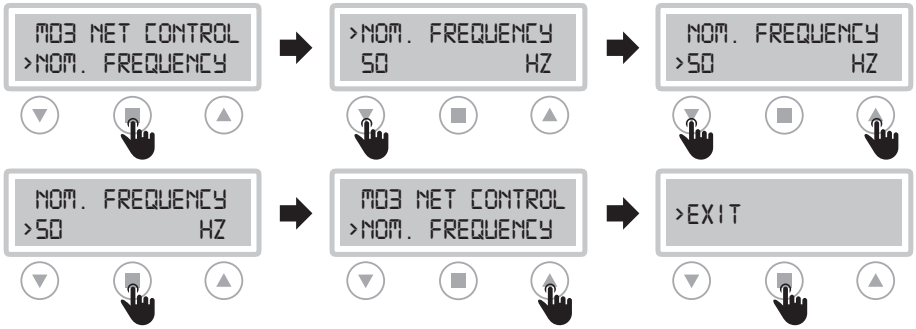


Installation

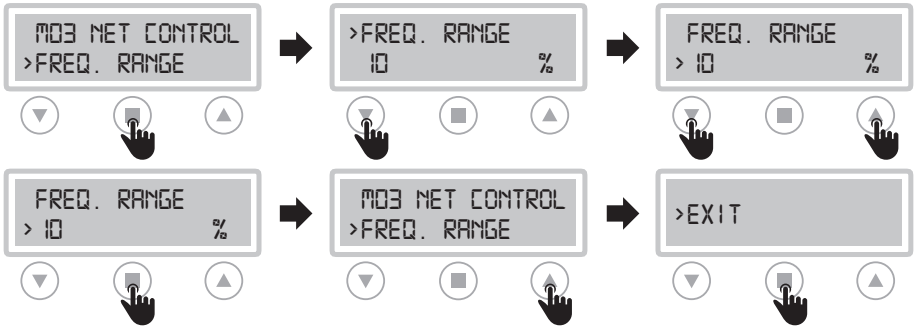
CHANGE MAXIMUM VOLTAGE



CHANGE NOMINAL FREQUENCY



CHANGE FREQUENCY RANGE



M04 PUMP 1 / M05 PUMP 2

ACCESS TO FUNCTION	MODIFIED PARAMETERS

The amperage value shown on the display may differ ± 5% from the nominal value of the pump (nameplate data) since the control panel is not a measuring instrument. The same value may differ depending on the operating conditions of the installation.

AUTOTUNING
It allows the self-learning of the data to be carried out again

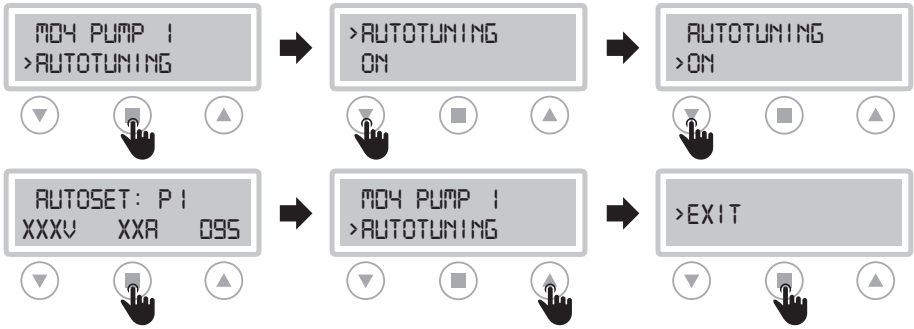
NOMINAL CURRENT
Set nominal/operating current of the pump

MINIMUM AMPERAGE
Current setting min. for dry running protection

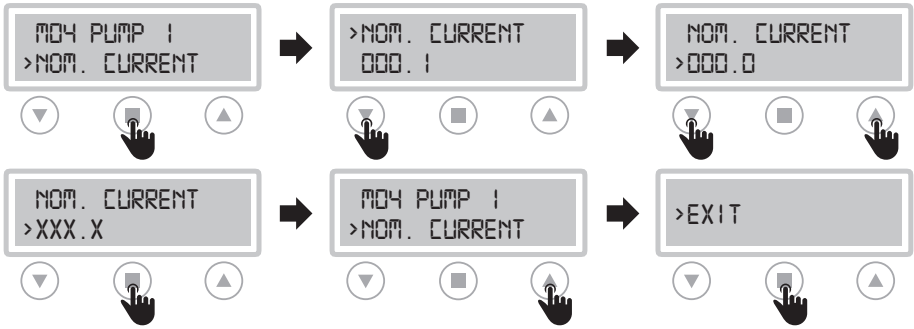
MAXIMUM AMPERAGE
Max current setting for overcurrent protection

START PER HOUR
Set max number of pump starts per hour

AUTOTUNING



CHANGE NOMINAL CURRENT



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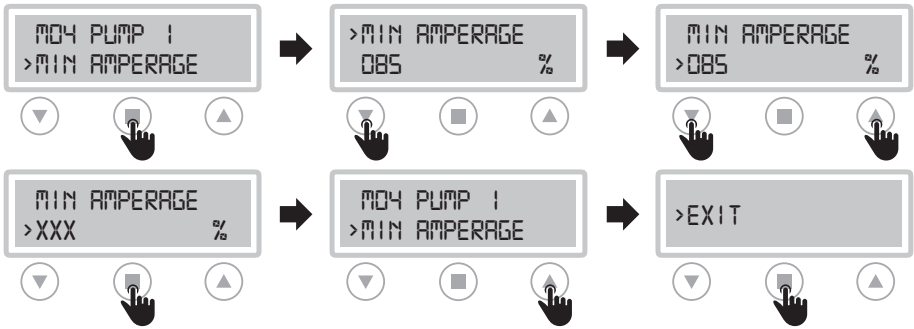
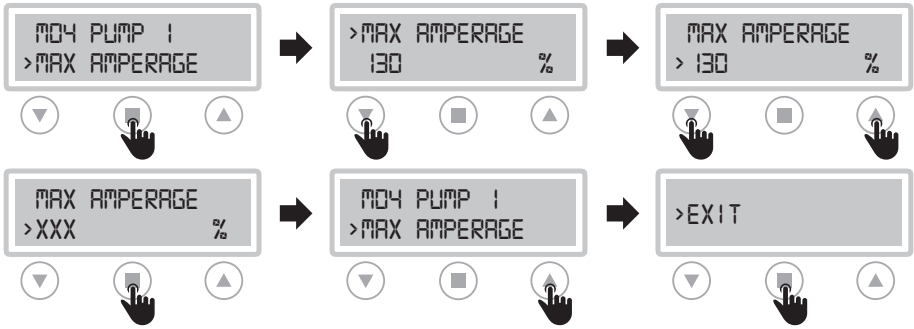
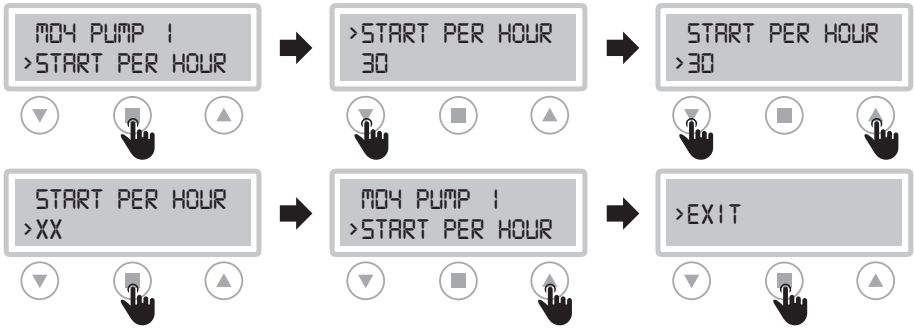
CHANGE MINIMUM AMPERAGE



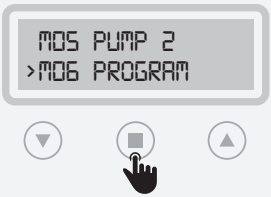
CHANGE MAXIMUM AMPERAGE



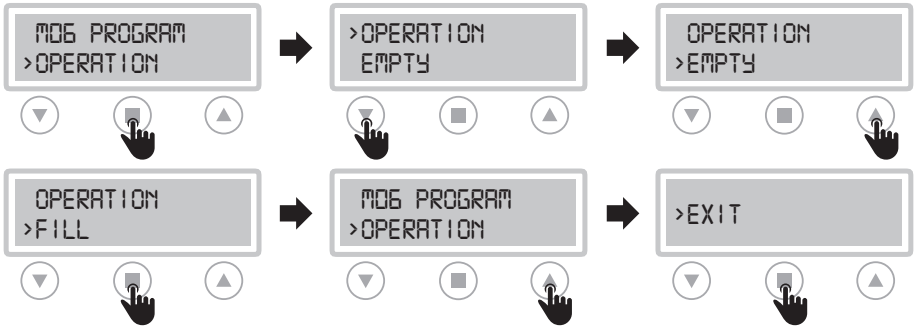
CHANGE START PER HOUR



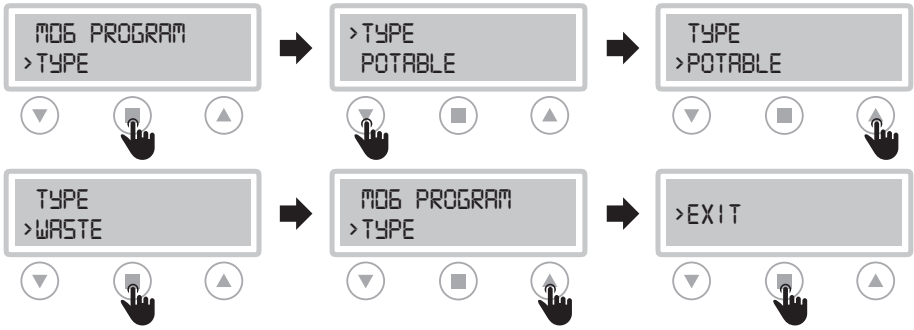
M06 PROGRAM

ACCESS TO FUNCTION	MODIFIED PARAMETERS
 **SELF HOLDING OPERATION** If the self holding is ON and the water level is going up, G1 is up, G2 goes up and starts pump 1, G3 goes up and starts pump 2. If the water level is going down, G3 goes down but does not stop pump 2, G2 goes down but it does not stop pump 1, G1 goes down and stops both pumps.	**OPERATION** Emptying selection "EMPTY" or filling "FILL" **TYPE** Selection of clear or dirty water types **SELF HOLDING** Mostly used for waste water applications: 4 floating switches has been used (G1 stop the pump, G2 start pump 1, G4 max level alarm and start the pump) **BMS (remote emergency start/stop)** The "BMS" function need to bridge G4 (contact open : pump enable / contact close: pump disable) **MULTI TANK** Possibility of use with 2 pumps in separate tanks

OPERATION (EMPTY/FILL)

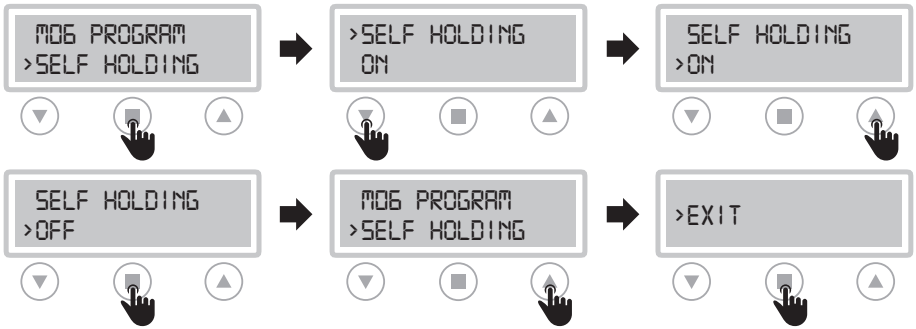


TYPE (POTABLE/WASTE WATER)

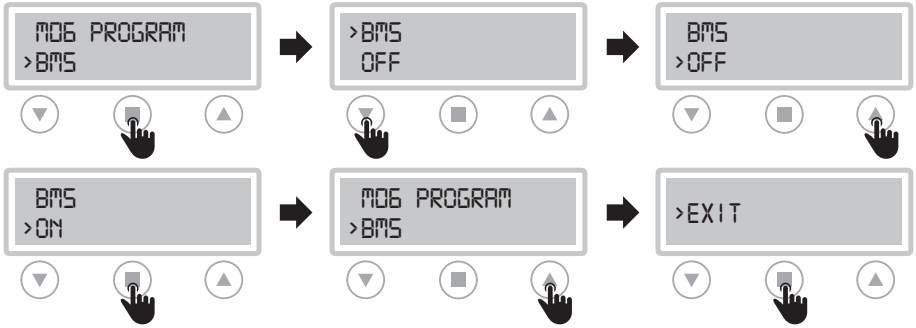


Installation

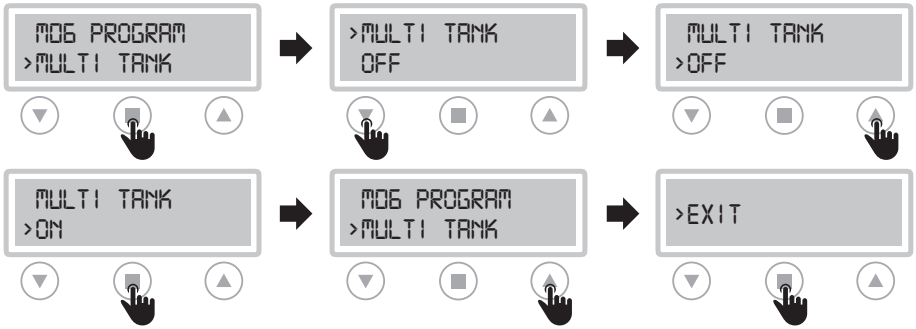
SELF HOLDING



BMS SETTING

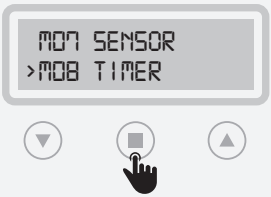


MULTI TANK SETTING

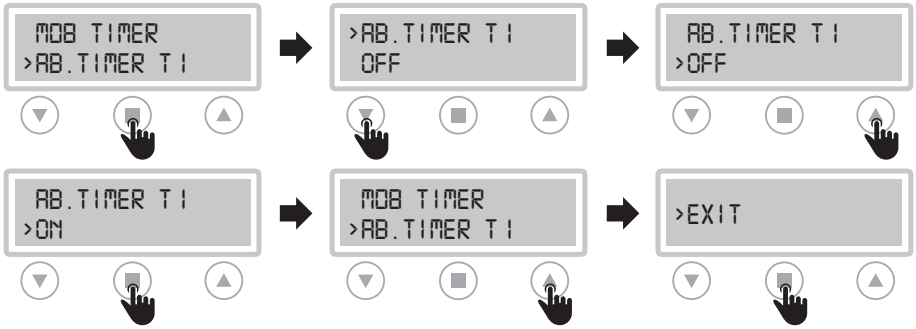


Installation

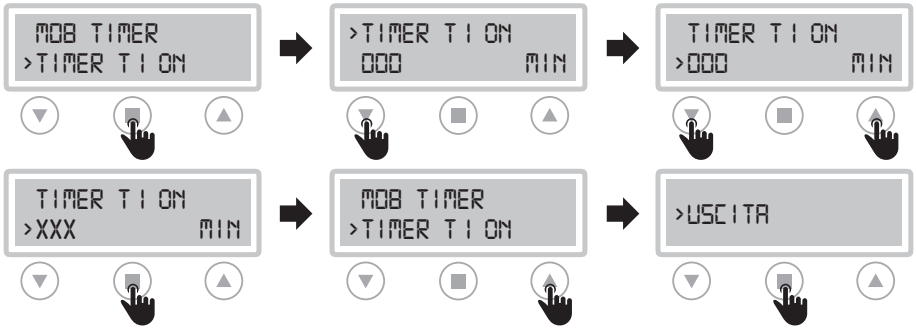
M08 TIMER

ACCESS TO FUNCTION	MODIFIED PARAMETERS
	**ENGAGE TIMER T1** **TIMER T1 ON** Setting the working minutes of the pump 1 **TIMER T1 OFF** Setting the pause minutes of the pump 1 **ENGAGE TIMER T2** **TIMER T2 ON** Setting the working minutes of the pump 2 **TIMER T2 OFF** Setting the pause minutes of the pump 2

SET DUTY/STAND-BY

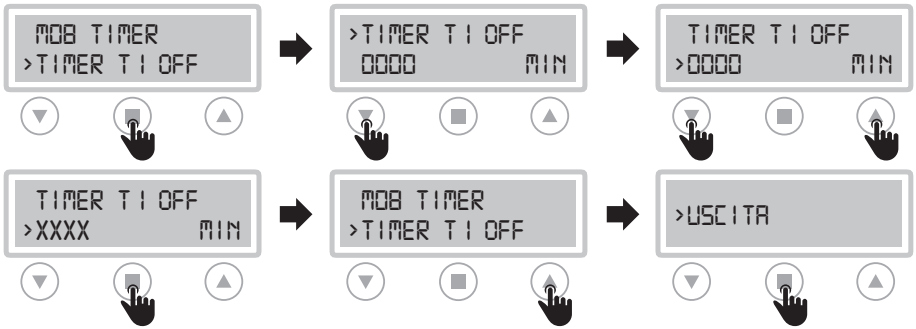


TIMER T1 ON



Installation

TIMER T1 OFF



TIMER SETTING T2 ON / TIMER T2 ON
The same procedure must be followed to set the values of the "TIMER T2 ON" and "TIMER T2 OFF" parameters.

BATTERY

The battery voltage reading is carried out every 3 hours. If a charge is made within 48 hours the battery has a voltage lower than 12V, then the display shall show a "battery anomaly" message. In this case it means the battery is about to run out, therefore it is advisable to carry out a check. In any case, depending on the type of battery it is essential to carry out periodic checks.

ABSENCE OF NETWORK

In this case a message is shown on the "mains failure" display and the rescuer switches to inverter operation. The energy supplied is available until the battery runs out.

RETURN NETWORK

The battery charger switches on automatically. Consider that if the batteries are partially or completely flat the charging time will not be less than 6 hours (time variable depending on the number of batteries applied)

SEND ALARMS (ONLY WITH GSM OPTIONAL)

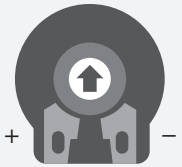
-network failure
-battery fault
-inverter fault
-minimum level
-maximum level

Installation

3.5 TRIMMER SETTINGS

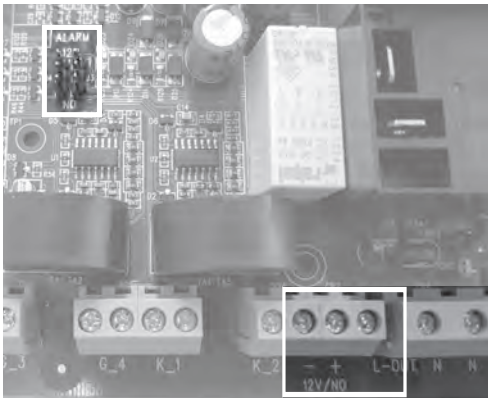
To change manually CLC sensitivity and water in the oil chamber , **interrupt the power supply to the control panel** and work on the trimmers , please following the below instructions:

PROTECTION DELAY
The pump protection switching delay has been set at **5 sec**.

TRIMMER SETTING	
	**TRIMMER 1: PROBE SENSITIVITY CHANGE** Probe sensivity (CLC) and water in oil chamber sensor trimmer regulation. It is possible to change the sensitivity of the CLC probes and the water sensor in the oil chamber, **interrupting the power supply to the control panel** and acting on trimmer 1 (clockwise to increase and counterclockwise to decrease sensitivity).

3.6 ALARM CONTACT OUTPUTS

SINGLE PHASE VERSION	
Alarm outputs: • + -12 / NO = 12V c.c. or contact NO	Alarm outputs: • + -12 / NO = 12V c.c. or contact NO



12 V c.c. output

free contact NO

General use

4.1 KEYPAD AND LIGHTS INDICATIONS

CONTROL PANEL	
PW	**PW** blue light indicating power network presence and powered panel.
⚠	**ALARM** red light to indicate a general alarm and pump stop. (min e max Amp, min e max V, min e max level, motor klixon, phase failure, max starts per hour).
↻	**START** green light to indicate pump start; fixed on to indicate pump running, flashing to indicate auto-setting mode.
AUT	**AUT** the button activates the auto-setting mode and automatic pump (if the green light is on, the automatic mode is active).
□	**0** pump stop button and reset alarms, sound alarm turn-off.
MAN	**MAN** activation of manual pump; holding it down, the engine is operated in by-pass mode, bypassing all the protections.

General use

4.2 ALARMS

The control panel signals a series of alarms that may occur during operation. Some of these stop the pumps, while others are only displayed.

All alarms are displayed on the panel (red LED flashing), while the display shows the code/alarms occurred until the cancellation by the operator.

The alarm "AL 11" starts all the available pumps.

ALARM CODE	ALARM DESCRIPTION	PUMP STOP	RELAY ON	LED SIGNAL
AL 1	MIN VOLTAGE	**YES**	**YES**	
AL 2	MAX VOLTAGE	**YES**	**YES**	
AL 3	LOW FREQUENCY	**NO**	**YES**	
AL 4	HIGH FREQUENCY	**NO**	**YES**	
AL 5	DRY RUNNING P1/P2	**YES**	**YES**	
AL 6	MAX AMPERAGE P1/P2	**YES**	**YES**	
AL 7	MAX STAR PER HOUR	**NO**	**YES**	
AL 7	TIME ON MAX + MAX START PER HOUR	**YES**	**YES**	
AL 8	WATER IN OIL CHAMBER P1/P2	**NO**	**YES**	
AL 9	KLIXON P1/P2	**YES**	**YES**	
AL 10	MIN LEVEL	**YES**	**YES**	
AL 11	MAX LEVEL	**NO**	**YES**	
AL 12	BATTERY ANOMALY	**NO**	**NO**	
	NETWORK LACK	**NO**	**NO**	
	ANOMALY INVERTER	**NO**	**NO**	

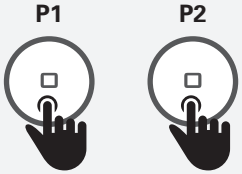
General use

ALARM WITH STOP PUMP

Following the detection of an alarm and the consequent blocking of the pump, the control panel provides the following operations:

- Try the first restart after 5 min.
- In case of a negative result, make another attempt after 30 min. and 3 other attempts with intervals of 60 min.
- After 5 attempts if the alarm persists, the control panel permanently blocks the pump and the alarm remains active until the user intervenes.

DELETE ALARM



To delete an alarm (for example dry run), press the pump (P1 or P2) button "0" as follows:

- the first press of the "0" button removes only the voltage from the buzzer terminals ("mute" function)
- the second press of the "0" button reset the alarm.

<u>If the alarm is not reset (by pressing the "0" key twice), at the next alarm signal, the panel will remain in "mute" mode.</u>

IMPORTANT!
If after having canceled the alarm, the same occurs again, an intervention on the cause is necessary.

General use

Operation with 2 pumps

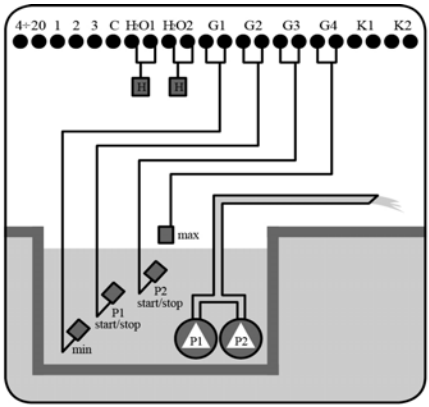
Pressing the AUT P1 / P2 key the panel becomes operational

Operation with 1pumps

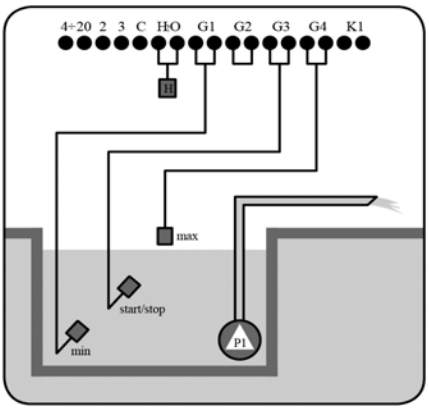
Pressing the AUT P1 (left) key the panel becomes operational

4.3 TYPICAL INSTALLATIONS

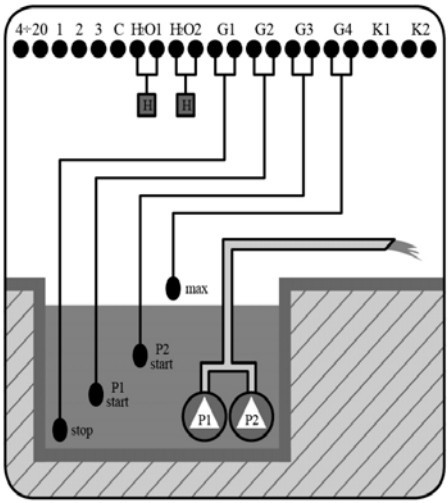
Operation with 2 pumps

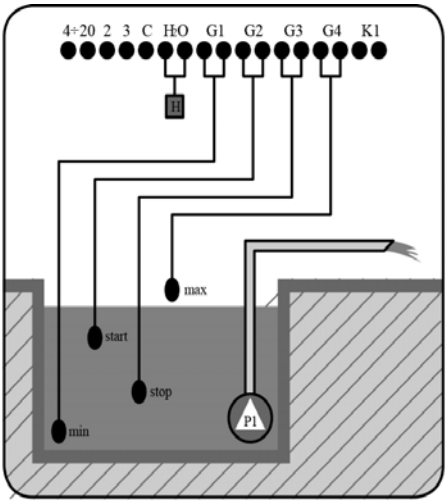


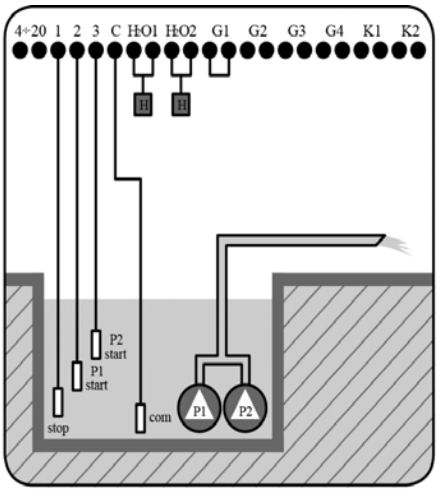
Operation with 1 pumps

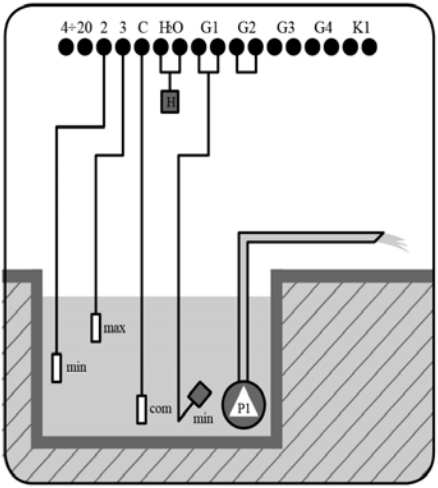


General use


4÷20 1 2 3 C H2O1 H2O2 G1 G2 G3 G4 K1 K2
H
H
max
P2
start
P1
start
stop
P1
P2


4÷20 2 3 C H2O G1 G2 G3 G4 K1
H
max
start
stop
min
P1


4÷20 1 2 3 C H2O1 H2O2 G1 G2 G3 G4 K1 K2
H
H
P2
start
P1
start
stop
com
P1
P2


4÷20 2 3 C H2O G1 G2 G3 G4 K1
H
max
min
com
min
P1

Maintenance

5.1 PUMPS STOP

MODE	BUTTON	STOP
MANUAL		The motor stops when the "MANUAL" button is released or once you digit the 0 button.
AUTOMATIC		When the input commands are disable/non active once you digit the 0 button.
OFF		Turning the main switch interlocking door in "OFF" position.

5.2 SERVICE

EPIC 2D does not require any routine maintenance provided that their working limits are observed. Any maintenance operations must be performed by qualified and experienced personnel, in compliance withthe safety regulations in force.

DANGER!
Make sure that EPIC 2D is disconnected from the power supply before performing any maintenance operations.

5.3 SPARE PARTS

Always state the exact model identification number and construction number when requesting technical information or spare parts from our sales and service centre.

Use only original spare parts when replacing any faulty components. The use of unsuitable spare parts can cause malfunctions, personal injury and damage to property.

5.4 WASTE DISPOSAL

After the control panel has been installed and started, the customer must provide for the appropriate elimination/disposal of the waste materials according to the legislation locally in force. If the control panel or parts of it must betaken out of service and dismantled, follow local regulations regarding sorted waste disposal. Refer to the appropriate recycling centres.

CAUTION!
Contamination of the environment with hazardous substances such as battery acid, fuel, oil, plastic, copper, etc., may cause serious damage to the environment and endanger people's health.

Certifications

6.1 CERTIFICATE OF CONFORMITY

The Manufacturer:

Atlantic Power Control S.r.l.s

Via E. Fermi, 10 - 35020 Polverara (PD) - ITALIA

DECLARES UNDER IS OWN RESPONSIBILITY
THAT THE FOLLOWINGS CONTROL PANELS:

POWER BOX EP2

ARE IN CONFORMITY
WITH COMMUNITY DIRECTIVES REGARDING:

- European directive 2006/95/CE
- Electromagnetic compatibility directive 2004/108/CE

CE

AND AS APPLICABLE TO HARMONIZED STANDARDS:

- EN 61439-1
- EN 61439-2
- EN 60204-1
- EN 55014-1
- EN 55014-2
- EN 61000-3-2
- EN 61000-3-3

Moreover Mr. Giuseppe Franchin, as the legal representative of the company, is the person authorized to compile the technical documentation file.

Polverara - Italy, 10/01/2018

Technical Manager
(Giuseppe Franchin)

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CE