



MADE IN ITALY



ENGLISH



EPIC 1D

RANGE 0,37÷15 kW
0,50÷20 Hp

**Installation
ad use
manual**

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1.1 PRESENTATION

This manual provides the essential information for the proper installation, use and maintenance of the EPIC 1D electrical control panel.

It is important that the user reads this manual before installing the device. Improper use may cause machine failure and lead to the forfeiture of the warranty coverage.

Always specify the exact model identification code and construction number if technical information or spare parts have to be requested from the sales department.

The instructions and warnings given below refer to the standard execution; for instructions, situations and events not covered by this manual or by the sales documentation, please contact the customer service.

EPIC 1D control panel must be installed in sheltered, well-ventilated, non-hazardous environments and used with maximum of +40°C and minimum temperatures of -5°C (relative humidity 50% at 40°C non-condensing).

1.2 DESCRIPTION

EPIC 1D is an electronic control panel for direct start-up of 1 single or three phase pump with protection against voltage surges, under and over current, dry running, phase failure control and possibility of receiving alarms via GSM.

Atlantic Power Control S.r.l. shall not be liable for damage caused or suffered by the panel, resulting from its improper use.

TECHNICAL FEATURES

Self learning of the motor data; min-max amperage protection (A); dry running protection made by $\cos\phi$ and min amperage; min and max voltage protection (V); phase failure protection;

start delay; stop delay; network restore delay; protection delay; frequency 50-60Hz.

OUTPUT ALARMS AND PROTECTIONS

Acoustic alarm mode; light alarm mode; alarm output 12Vdc; alarm output 230V - 400V; alarm delay; min-max water level; min-max voltage; phase failure; frequency failure; min-max motor current; min motor $\cos\phi$; klaxon motor intervention; water in oil chamber.

1.3 HANDLING

The control panel must be handled with care, falls and shocks can damage it internally, even without any visible external signs.

PRELIMINARY INSPECTION

After removing the external packaging, visually inspect that the control panel has not been damaged during shipping.

If the control panel is damaged, inform dealer as soon as possible, but no later than 5 days after delivery.

STORED

In the event that the control panel arrives at its destination, but for any reason is not installed and starter immediately, provide for its storage. Therefore, keep the outer packaging and that of the various loose accessories intact, and protect it from the weather and from any knocks or falls.

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: PUMP

- Make sure the pump is fully primed before you start it.
- Make sure the pump is running with the correct rotation.
- The electric pump or the motor 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 pump or the motor 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:

- (400V $\pm$ 10% 50/60Hz for EPIC 1D -400/...)
- (230V $\pm$ 10% 50/60Hz for EPIC 1D -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 leakage 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:

- (400V $\pm$ 10% 50/60Hz three-phase)
- (230V $\pm$ 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.

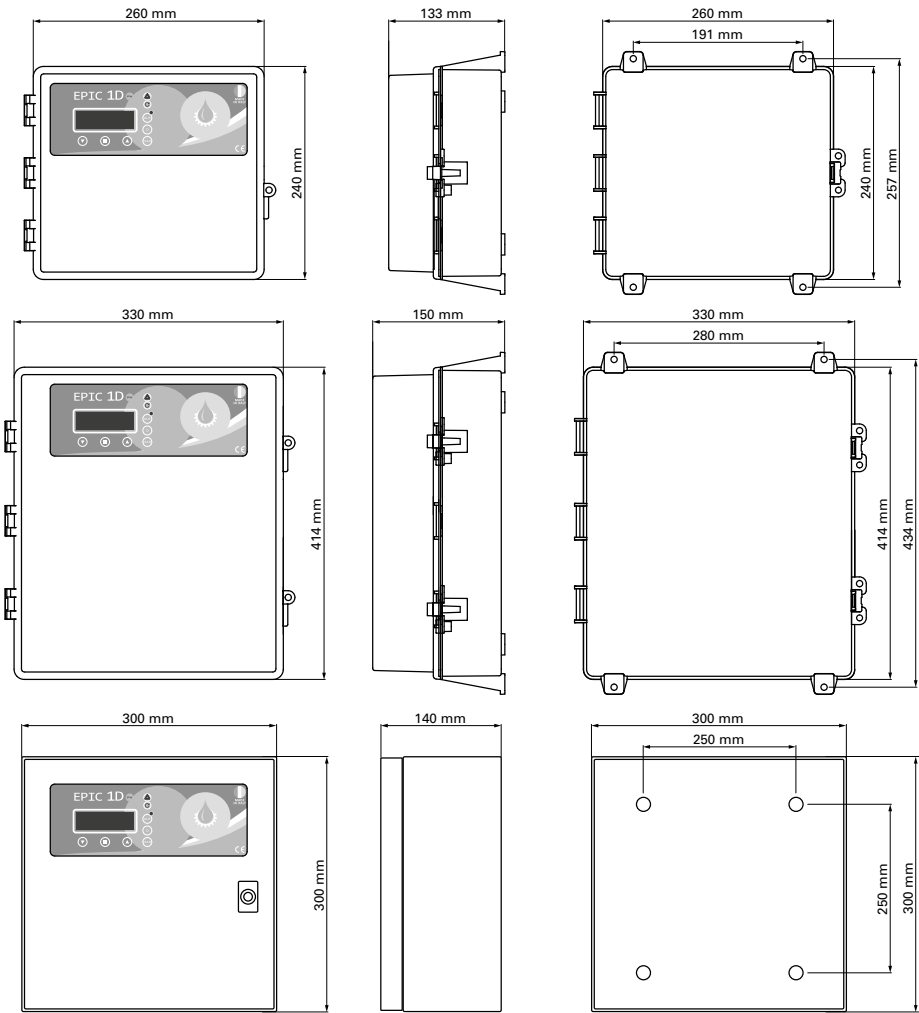
3.1 ASSEMBLING

Fix the control panel to a stable support with suitable screws or screw anchors using the holes in the four corners of the box.

When tightening the cables in the relevant terminals, use the right size tool to avoid damaging the clamping screws or their seats; if using an electric screwdriver, dose the tightening

friction appropriately to avoid damaging the threads or screws.

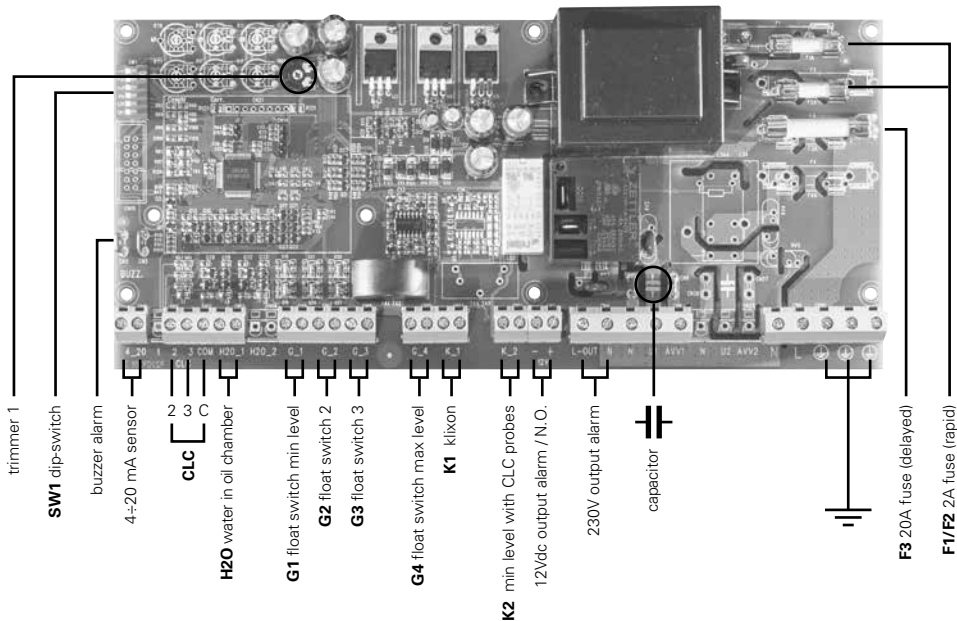
After fixing, remove every plastic or metallic impurities (ex. pieces of copper or plastic shavings) inside the box before supplying power.



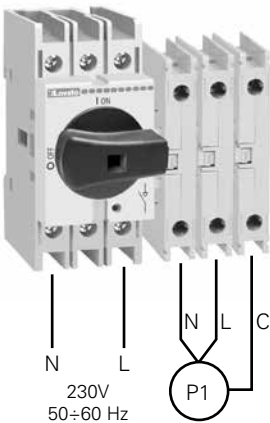
3.2 ELECTRICAL CONNECTIONS

EPIC 1D 230

ELECTRONIC BOARD

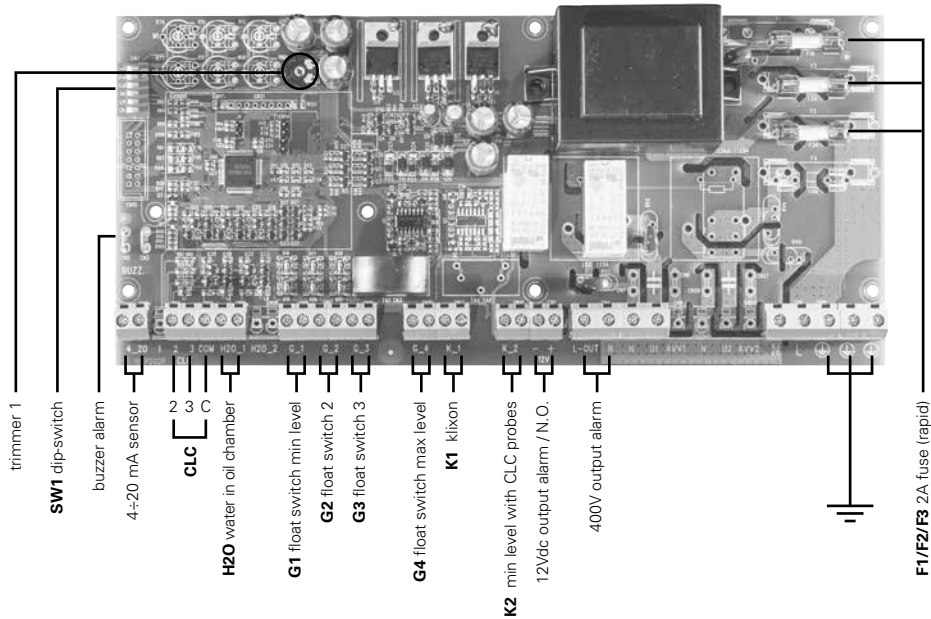


POWER SUPPLY

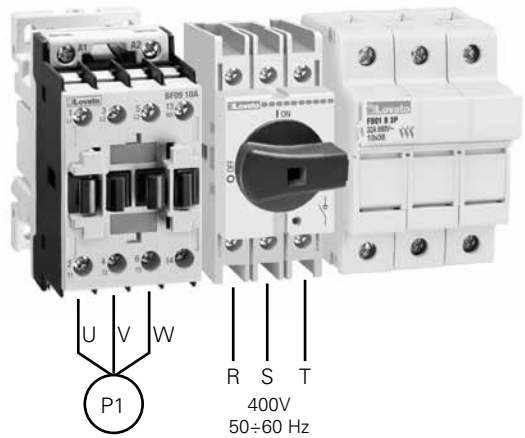


EPIC 1D 400

ELECTRONIC BOARD

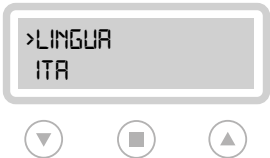


POWER SUPPLY



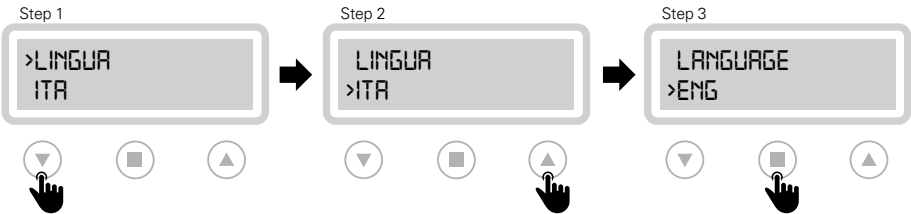
3.3 ADJUSTMENTS AND SETTINGS (INITIALIZATION)

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.

PUMP TRIGGER



To proceed with self-learning procedure, the pump must first be triggered. **Do not press confirm**, but start the pumps, keeping the “MAN” button pressed (for 3 sec.).

AUTOTUNING (OBLIGATORY)



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

For the final confirmation of the data (step 7) type “YES”, 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!
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.

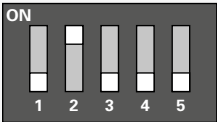
By pressing the “AUT” P1 button the panel becomes operational.

PRESET PARAMETERS

LANGUAGE: selected	STOP DELAY: 1 sec.
TURN ON DELAY: 2 sec.	OPERATION: emptying
MANUAL KEY: unstable	TYPE: potable
START DELAY: 4 sec.	SELF HOLDING: on

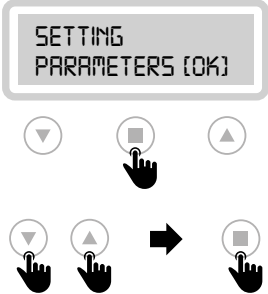
3.4 ADJUSTMENTS AND SETTINGS (ADVANCED MENU)

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.

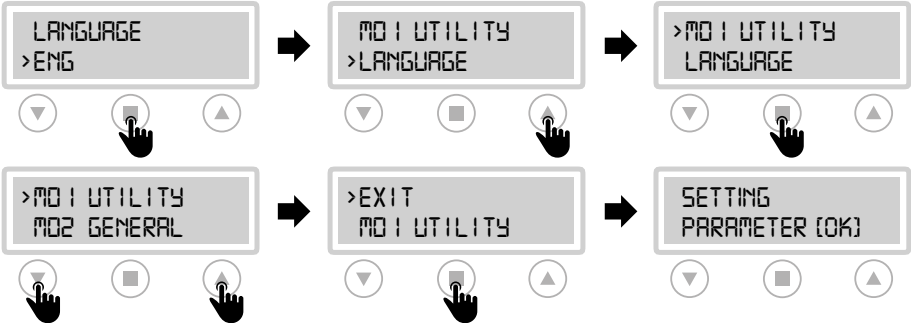


SETTING
PARAMETERS [OK]

EXIT
M01 UTILITY
M02 GENERAL
M03 NET CONTROL
M04 PUMP 1

M06 PROGRAM
M07 SENSOR
M08 TIMER
EXIT

CONFIRM MODIFICATIONS AND EXIT FROM ADVANCED MENU (EXAMPLE)



LANGUAGE
>ENG

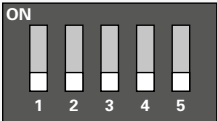
M01 UTILITY
>LANGUAGE

>M01 UTILITY
LANGUAGE

>M01 UTILITY
M02 GENERAL

>EXIT
M01 UTILITY

SETTING
PARAMETER [OK]



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**.

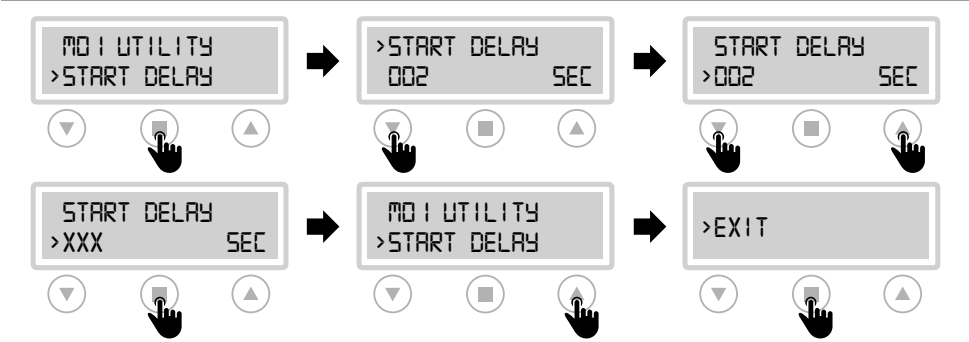
M01 UTILITY

ACCESS TO FUNCTION	MODIFIED PARAMETERS
>M01 UTILITY M02 GENERAL ▼ ■ ▲	LANGUAGE (default: as selected) Language selection START DELAY (default: 2 sec.) Control panel switch-on delay after restart (in sec.) MANUAL KEYPAD (default: OFF) Possibility of operating the "MAN" button in stable or unstable mode (ON: stable / OFF: unstable) MAX LEVEL ALARM DELAY (default: OFF) Possibility to delay 15 minutes. (not modifiable) the maximum level alarm. The display will show the alarm and the pump will start (if available), only the alarm relay and the buzzer will be delayed.

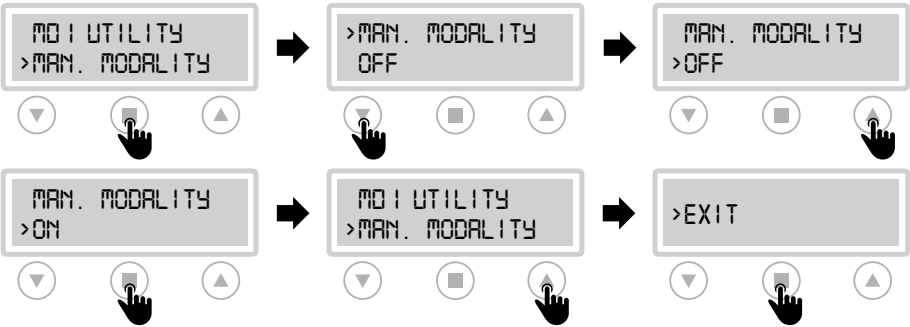
CHANGE LANGUAGE



CHANGE START DELAY



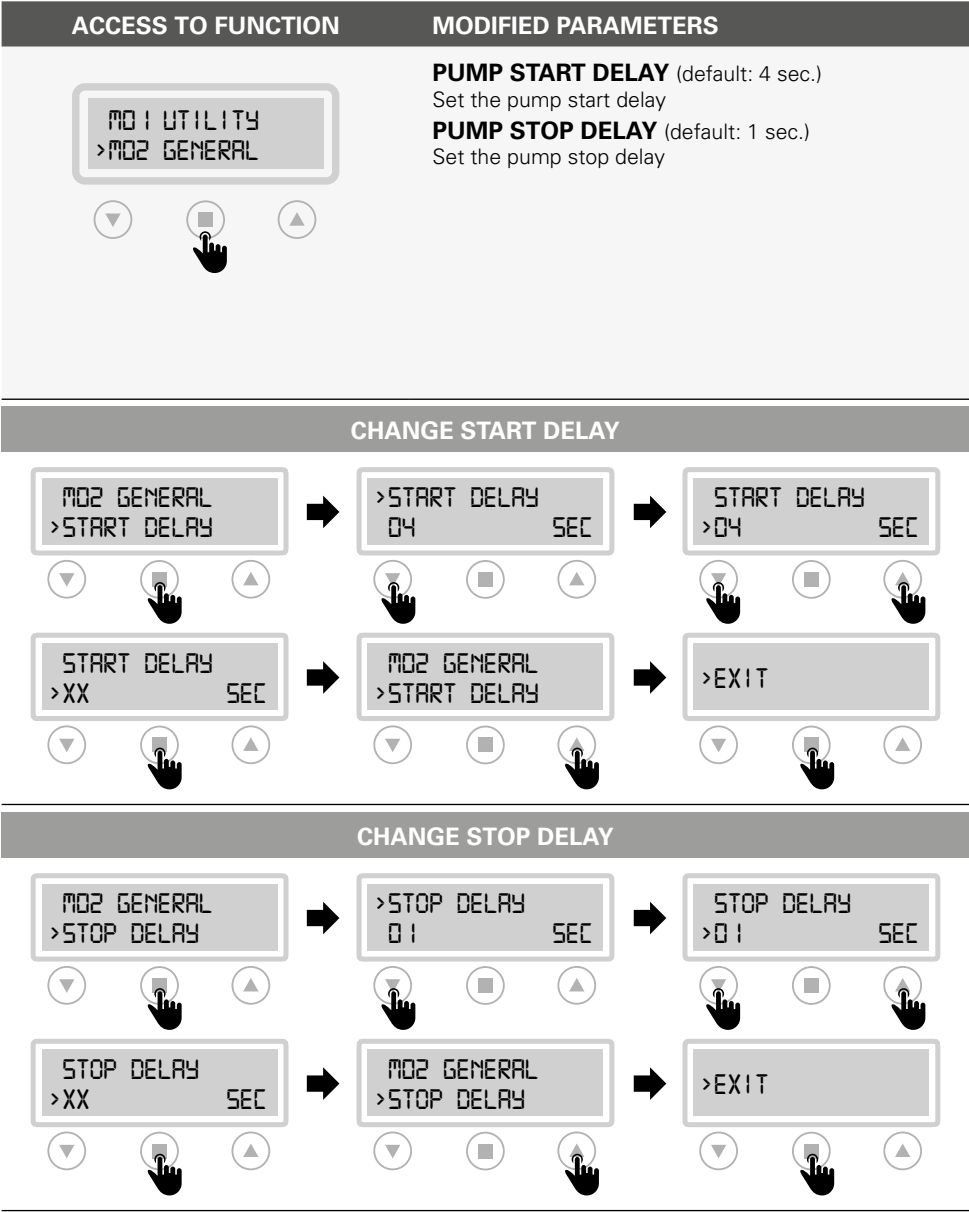
CHANGE “MAN” BUTTON (STABLE/UNSTABLE)



CHANGE MAX LEVEL ALARM DELAY



M02 GENERAL



M03 NET CONTROL

ACCESS TO FUNCTION

MOD2 GENERAL
>M03 NET CONTROL

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MODIFIED PARAMETERS

NOMINAL VOLTAGE (default: autotuning read)
Set the nominal voltage

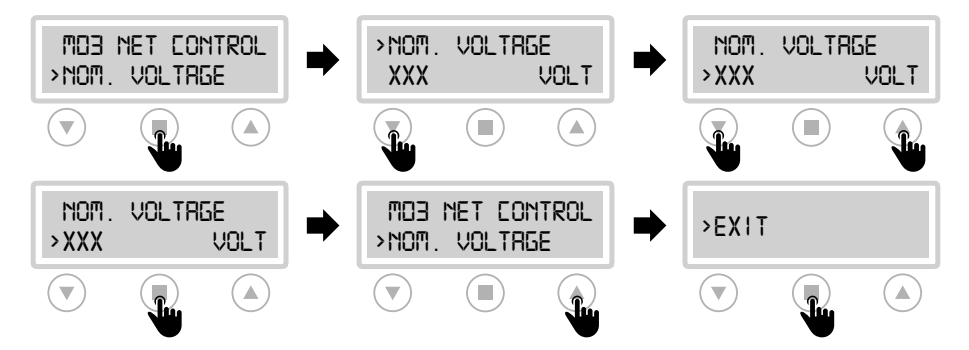
MINIMUM VOLTAGE (default: 90%)
Set the minimum voltage

MAXIMUM VOLTAGE (default: 110%)
Set the maximum voltage

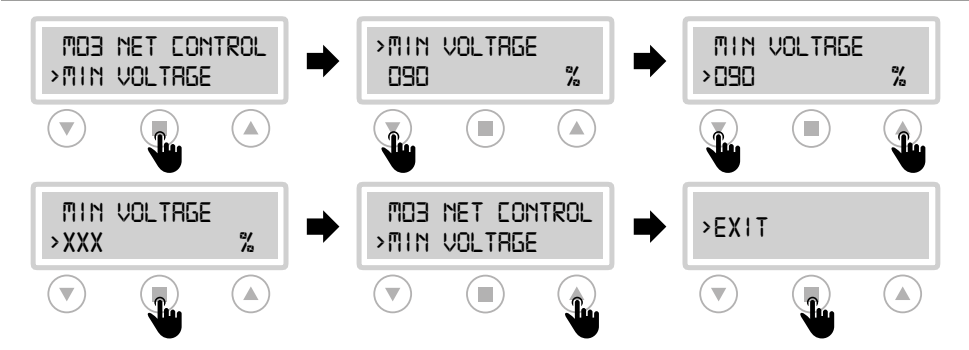
NOMINAL FREQUENCY (default: autotuning read)
Set the nominal frequency

FREQUENCY RANGE (default: 10%)
Set the frequency range

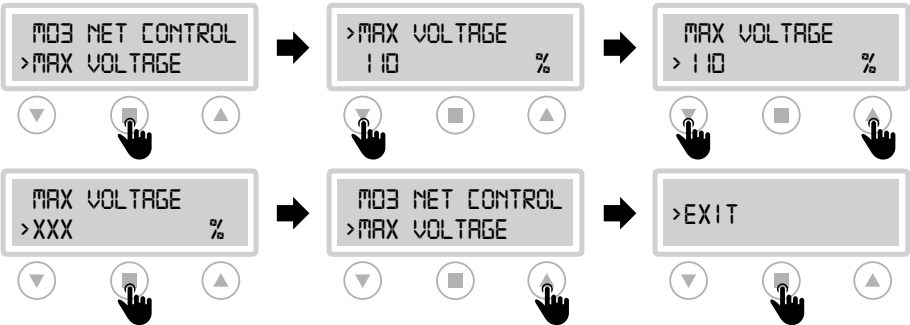
CHANGE NOMINAL VOLTAGE



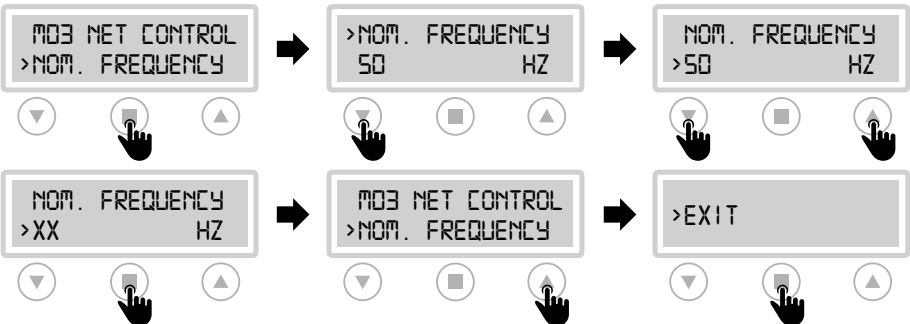
CHANGE MINIMUM VOLTAGE



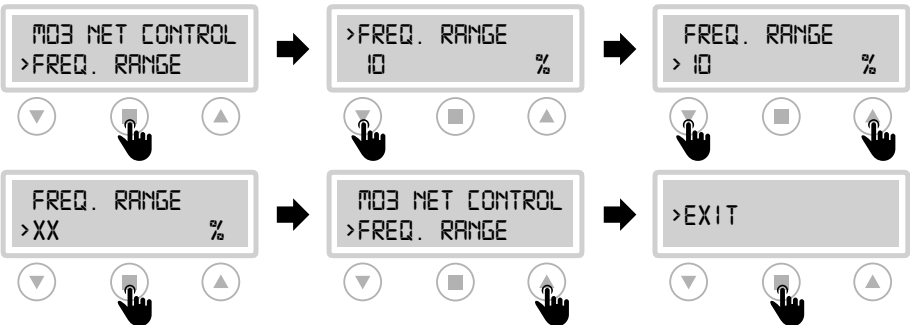
CHANGE MAXIMUM VOLTAGE



CHANGE NOMINAL FREQUENCY



CHANGE FREQUENCY RANGE



M04 PUMP 1

ACCESS TO FUNCTION

>M04 PUMP 1
M06 PROGRAM

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The amperage value and cosφ 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.

MODIFIED PARAMETERS

AUTOTUNING

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

NOMINAL CURRENT (default: autotuning read)
Set nominal/operating current of the pump

MINIMUM AMPERAGE (default: 65%)
Current setting min. for dry running protection

MAXIMUM AMPERAGE (default: 130%)
Max current setting for overcurrent protection

START PER HOUR (default: 30)
Set max number of pump starts per hour

MIN COSφ (default: 75% of value read in autotuning)
Set min. cosφ for dry running protection

AUTOTUNING

M04 PUMP 1
>AUTOTUNING

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■

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→

>AUTOTUNING
ON

▼

■

▲

→

AUTOTUNING
>ON

▼

■

▲

AUTOSET: P 1
XXXV XXA 095

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■

▲

→

M04 PUMP 1
>AUTOTUNING

▼

■

▲

→

>EXIT

▼

■

▲

CHANGE NOMINAL CURRENT

M04 PUMP 1
>NOM. CURRENT

▼

■

▲

→

>NOM. CURRENT
000.0

▼

■

▲

→

NOM. CURRENT
>000.0

▼

■

▲

NOM. CURRENT
>XXX.X

▼

■

▲

→

M04 PUMP 1
>NOM. CURRENT

▼

■

▲

→

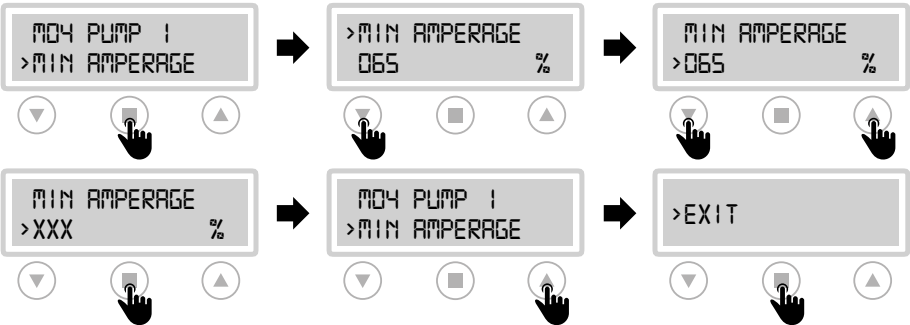
>EXIT

▼

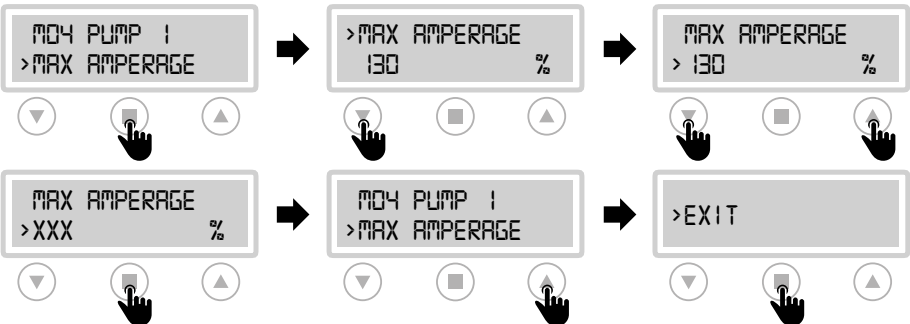
■

▲

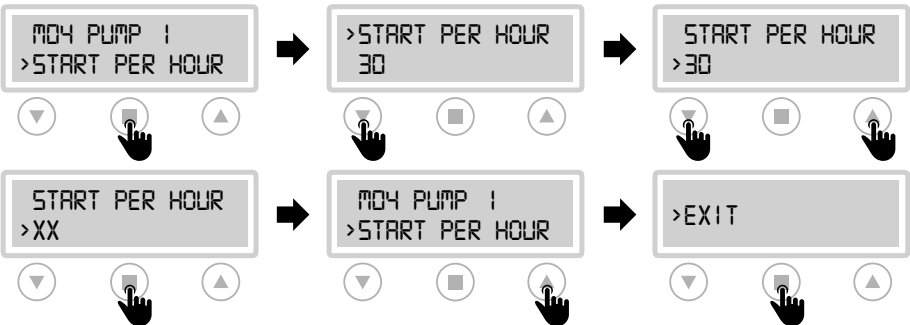
CHANGE MINIMUM AMPERAGE

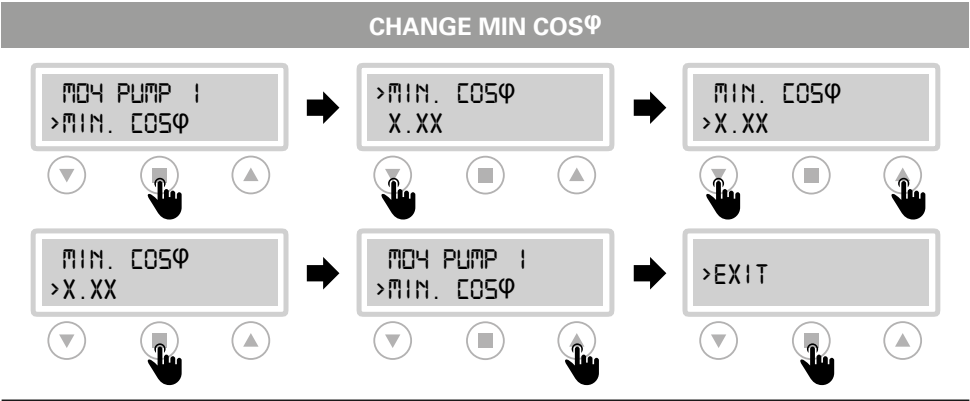


CHANGE MAXIMUM AMPERAGE



CHANGE START PER HOUR





M06 PROGRAM

ACCESS TO FUNCTION

MOD4 PUMP 1
>M06 PROGRAM

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For "waste water" type, only "EMPTY" function is available.

SELF HOLDING OPERATION (WASTE WATER)
When "self holding" is on and "waste water" selected, the float G1 is the STOP for both pumps (P1-P2). Consequently G2 and G3 floats in only starts.

MODIFIED PARAMETERS

OPERATION (default: EMPTY)
Emptying selection "EMPTY" or filling "FILL"

TYPE (default: POTABLE)
Selection between clear (potable) and waste water

SELF HOLDING (default: ON)
Possibility to carry out a rapid emptying of the tank, mostly used for waste water applications

BMS (remote emergency start/stop) (default: OFF)
Possibility to start/stop the panel by remote button. The use of "BMS" function works thanks to G4 input (closed contact: pumps enabled / contact open: pumps disabled)

OPERATION (EMPTY/FILL)

MOD6 PROGRAM
>OPERATION

▼

■

▲

→

>OPERATION
EMPTY

▼

■

▲

→

OPERATION
>EMPTY

▼

■

▲

OPERATION
>FILL

▼

■

▲

→

MOD6 PROGRAM
>OPERATION

▼

■

▲

→

>EXIT

▼

■

▲

TYPE (POTABLE/WASTE WATER)

MOD6 PROGRAM
>TYPE

▼

■

▲

→

>TYPE
POTABLE

▼

■

▲

→

TYPE
>POTABLE

▼

■

▲

TYPE
>WASTE

▼

■

▲

→

MOD6 PROGRAM
>TYPE

▼

■

▲

→

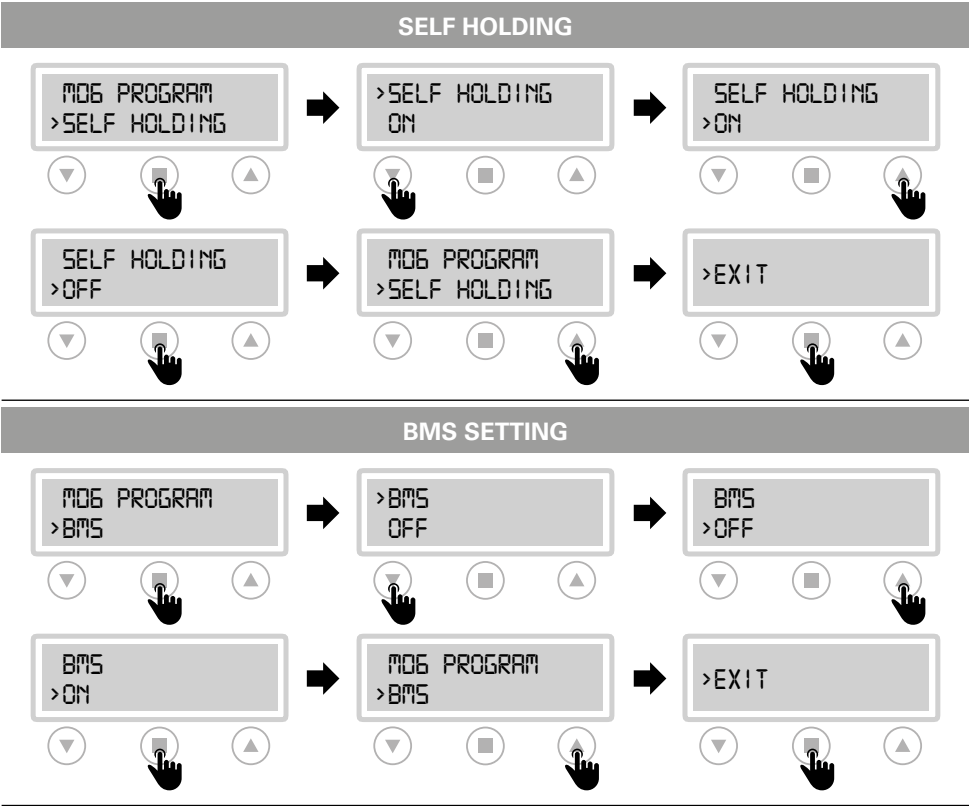
>EXIT

▼

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19



M07 SENSOR (sensor/trasducer 4÷20 mA)

ACCESS TO FUNCTION

MOD6 PROGRAM
>M07 SENSOR

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The "SENSOR" function allows to use the control panel with piezoresistive, piezocapacitive level sensors or pressure transducers (logic 4÷20 mA).

ATTENTION: Switch off the control panel before connecting the sensor.

MODIFIED PARAMETERS

PARAMETERS (default: OFF)
Setting unit of measure (mt/bar/celsius/cm)

FULL SCALE (default: 160.0)
Set the full scale value specified by the manufacturer of the sensor used (serial value 160.0)

MINIMUM LEVEL (default: 5.0)
Parameter active only with unit of measure in mt/cm

MAXIMUM LEVEL (default: 100.0)
Parameter active only with unit of measure in mt/cm

START P1 and STOP P1 (default: 10.0÷20.0)

PIEZO OFFSET
Parameter active only with unit of measure in mt/cm

SET PARAMETERS

MOD7 SENSOR
>PARAMETERS

▼

■

▲

→

>PARAMETERS
OFF

▼

■

▲

→

PARAMETERS
>OFF MT/BAR/CELS

▼

■

▲

→

PARAMETERS
>XXX

▼

■

▲

→

MOD7 SENSOR
>PARAMETERS

▼

■

▲

→

>EXIT

▼

■

▲

SET FULL SCALE

MOD7 SENSOR
>FULL SCALE

▼

■

▲

→

>FULL SCALE
160.0

▼

■

▲

→

FULL SCALE
> 160.0

▼

■

▲

→

FULL SCALE
>XXX.X

▼

■

▲

→

MOD7 SENSOR
>FULL SCALE

▼

■

▲

→

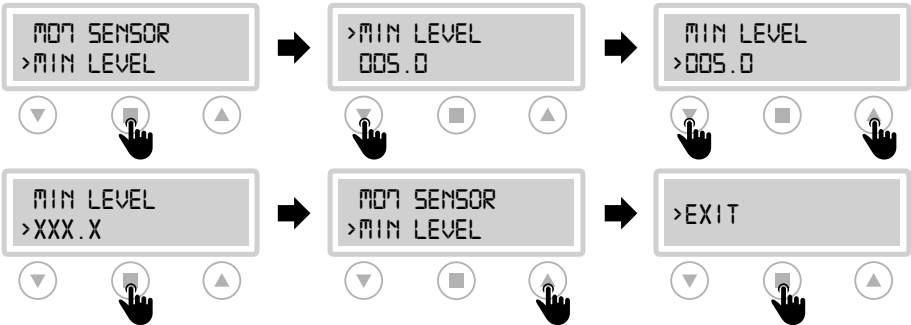
>EXIT

▼

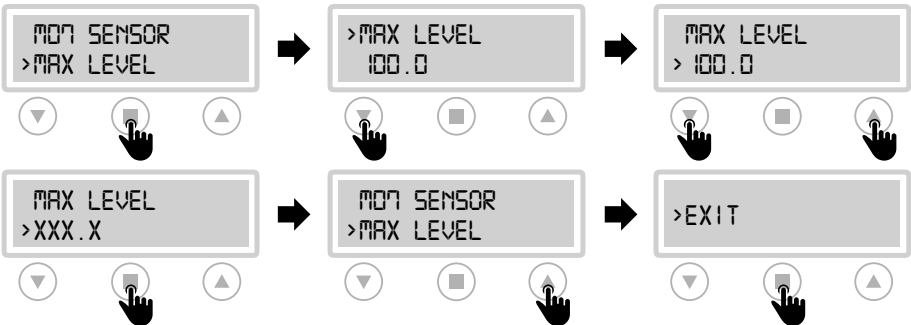
■

▲

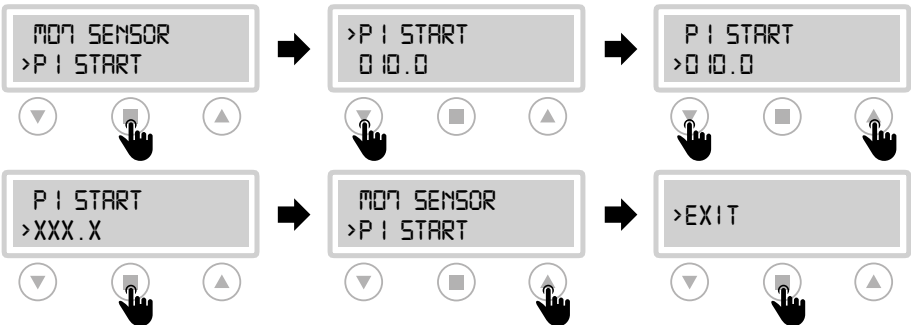
SET MINIMUM LEVEL

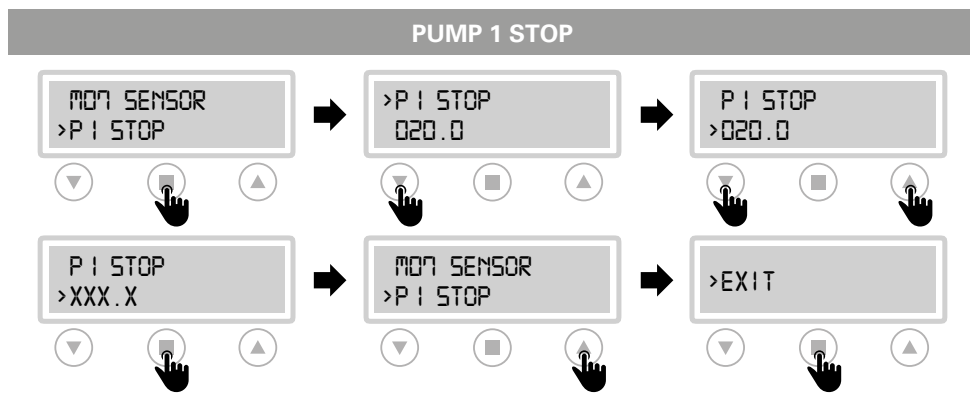


SET MAXIMUM LEVEL



PUMP 1 START





IMPORTANT!

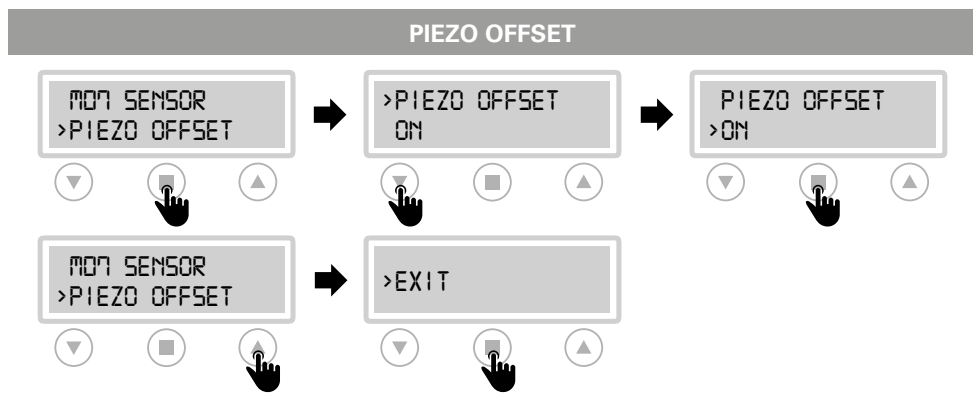
For the "PARAMETERS" set to mt/celsius/cm, the "FILL" and "EMPTY" programs can be selected on M06 PROGRAM > OPERATION menu (see page 19)

- FILL: START value < STOP value
- EMPTY: START value > STOP value

For the "PARAMETERS" set to bar, only the "EMPTY" program can be selected

- EMPTY: START value < STOP value

For each type of sensor the "TYPE" parameter must be set to "POTABLE" on the M06 PROGRAM menu (see page 19)



IMPORTANT!

Active only for level sensor with "PARAMETERS" set to mt/cm

- it is necessary to connect the sensor and set the offset for level "0"
- once the procedure has been completed, the "0" level is set to level detected by the sensor (to obtain a real "0" level, carry out the procedure with the sensor out of the water)

M08 TIMER

ACCESS TO FUNCTION

MOD1 SENSOR
>MOB TIMER

The duty/stand-by times are not linked to inputs status. Pump startup is always dependent on inputs consent. To obtain a duty/stand-by timer, the G3 input must be closed.

MODIFIED PARAMETERS

ENGAGE TIMER T1 (default: OFF)

TIMER T1 ON (default: 0 min.)
Setting the working minutes of the pump

TIMER T1 OFF (default: 0 min.)
Setting the pause minutes of the pump

SET DUTY/STAND-BY

MOB TIMER
>EN.TIMER T1

>EN.TIMER T1
OFF

EN.TIMER T1
>OFF

EN.TIMER T1
>ON

MOB TIMER
>EN.TIMER T1

>EXIT

TIMER T1 ON

MOB TIMER
>TIMER T1 ON

>TIMER T1 ON
000 MIN

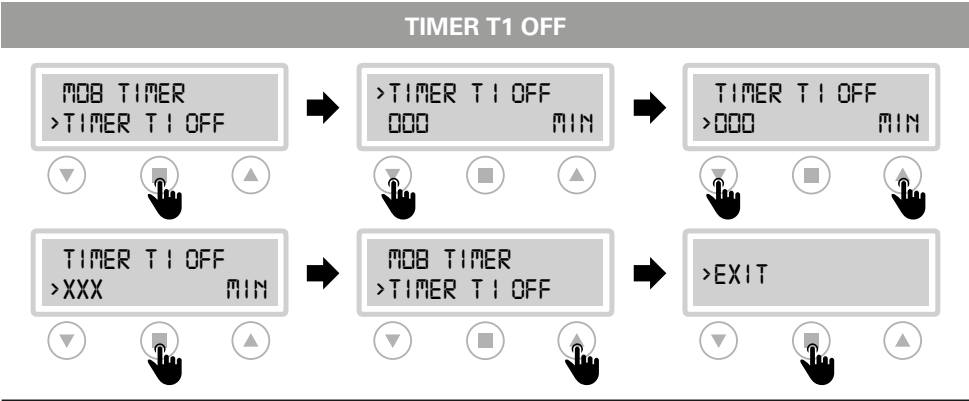
TIMER T1 ON
>000 MIN

TIMER T1 ON
>XXX MIN

MOB TIMER
>TIMER T1 ON

>EXIT

25

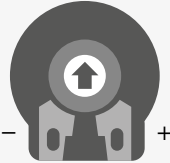


3.5 TRIMMER SETTINGS

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:

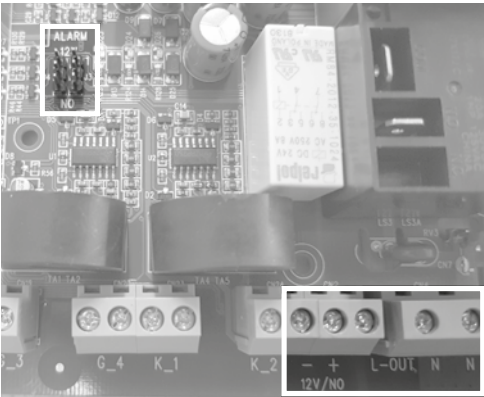


PROTECTION DELAY
The pump protection switching delay has been set at **5 sec.**

TRIMMER SETTING	
	TRIMMER 1: PROBE SENSITIVITY CHANGE Probe sensitivity (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	TREE PHASE VERSION
Alarm outputs: • L-OUT / N = 230Vac • + -12 / NO = 12Vdc or N.O. contact	Alarm outputs: • L-OUT / N = 400Vac • + -12 / NO = 12Vdc or N.O. contact



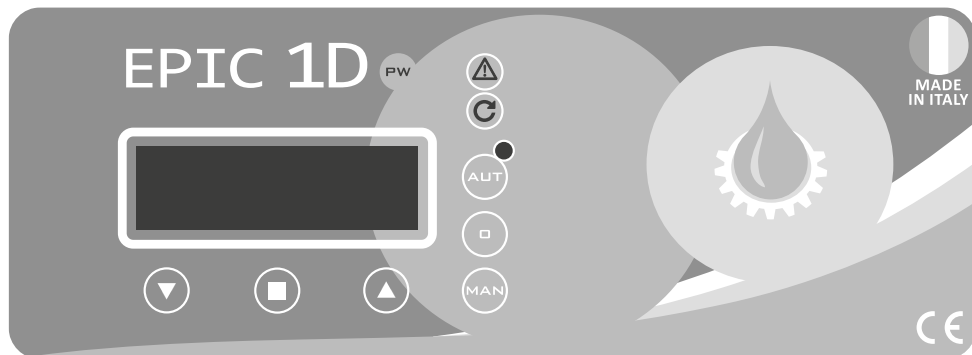
12Vdc output



N.O. free contact

[illegible]

4.1 KEYPAD AND LIGHTS INDICATIONS



CONTROL PANEL	
	PW blue light indicating power network presence and powered panel.
	ALARM red light to indicate a general alarm and pump stop. (min and max Amp, min and max V, min and max level, motor klaxon, water in oil chamber, phase failure, max starts par hour).
	START green light to indicate pump start; fixed on to indicate pump running, flashing to indicate auto-setting mode.
	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 activation of manual pump; holding it down, the engine is operated in by-pass mode, bypassing all the protections.

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.

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	YES	YES	
AL 6	MAX AMPERAGE P1	YES	YES	
AL 7	MAX STAR PER HOUR	NO	YES	
AL 8	WATER IN OIL CHAMBER P1	NO	YES	
AL 9	KLIXON P1	YES	YES	
AL 10	MIN LEVEL	YES	YES	
AL 11	MAX LEVEL	NO	YES	

 The alarm “AL 11” starts all the available pumps.

ALARM WITH STOP PUMP



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

- After 30 minutes try to restart the pump
- In case of a negative feedback, it makes further attempts every 30 minutes

N.B.: Restart attempts will be made only if the panel receives the start consent from the connected inputs.

DELETE ALARM



To delete an alarm (for example dry run), press the pump (P1) 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.

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

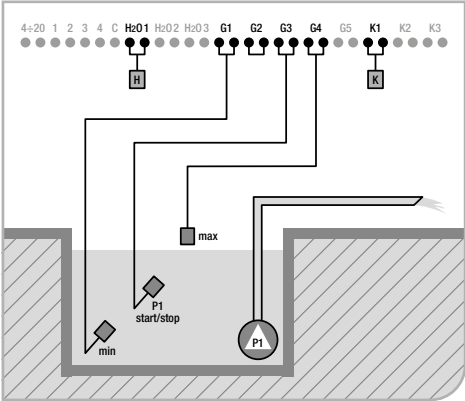


IMPORTANT!

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

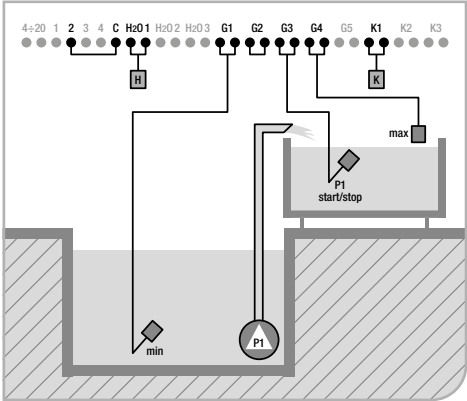
4.3 TYPICAL INSTALLATIONS

Picture 1



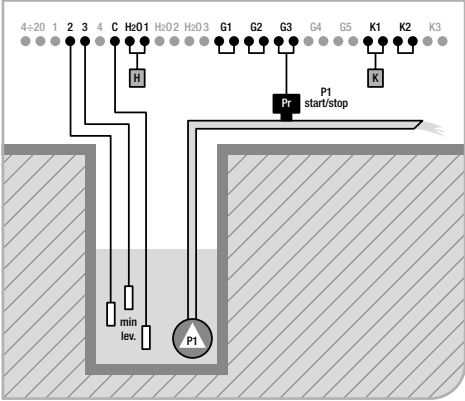
potable water - empty

Picture 2



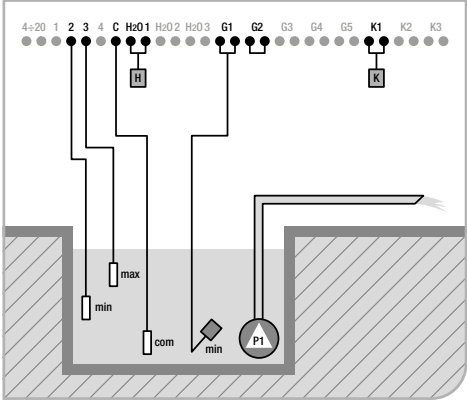
potable water - fill

Picture 3



potable water - empty (min level with CLC)

Picture 4

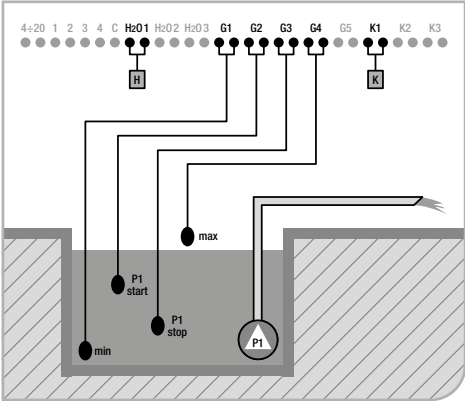


potable water - empty

4÷20	input for 4÷20 mA sensor or pressure transducer
2/3/C	input for level probes
H	input for water in oil chamber sensor/water leakage
K	input for motor klixon
Pr	pressure switch
P	pump

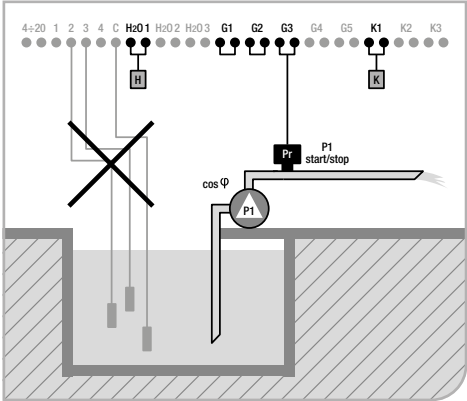
T	pressure transducer
■	float switch for clear water
●	float switch for waste water
□	level probes
■	4÷20 mA piezoresistive sensor

Picture 5



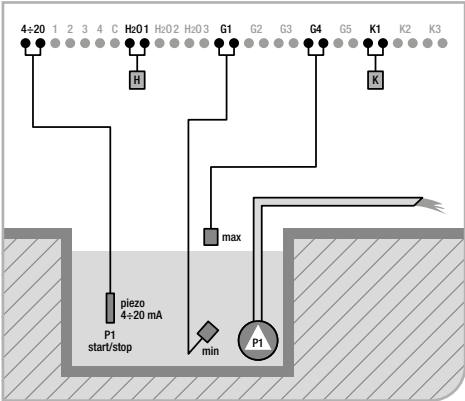
waste water - empty

Picture 6



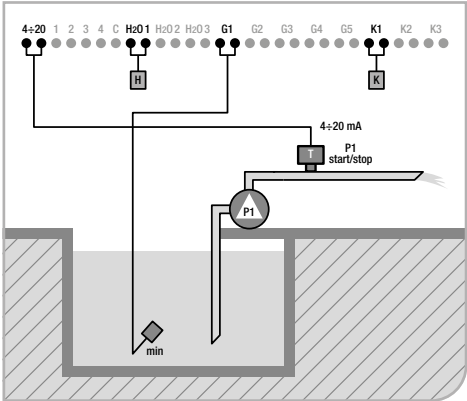
potable water - empty

Picture 7



potable water - empty/fill (sensor: mt/cm)

Picture 8



potable water - empty (sensor: bar)

4÷20	input for 4÷20 mA sensor or pressure transducer
2/3/C	input for level probes
H	input for water in oil chamber sensor/water leakage
K	input for motor klaxon
Pr	pressure switch
P	pump

T	pressure transducer
□	float switch for clear water
●	float switch for waste water
▮	level probes
▮	4÷20 mA piezoresistive sensor

5.1 PUMP 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

The control panel does not require any routine maintenance if their working limits are observed. Any maintenance operations must be performed by qualified and experienced personnel, in compliance with the safety regulations in force.



DANGER!
Make sure the control panel is disconnected from the power supply before any maintenance work.

5.3 SPARE PARTS

Always specify the exact model identification code and construction number if technical information or spare parts have to be requested from the sales and customer service.

Use only original spare parts to replace any defective components. The use of unsuitable spare parts can lead to malfunctions and danger to persons and 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 be taken 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.

6.1 CERTIFICATE OF CONFORMITY

The Manufacturer:
Atlantic Power Control S.r.l.s
Via E. Fermi, 10 - 35020 Polverara (PD) - ITALY

**DECLARES UNDER IS OWN RESPONSIBILITY
THAT THE FOLLOWINGS CONTROL PANELS:**

EPIC 1D -230 e EPIC 1D -400

**ARE IN CONFORMITY
WITH COMMUNITY DIRECTIVES REGARDING:**

- European directive 2014/35/UE
 - Electromagnetic compatibility directive 2014/30/UE



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

CERTIFICATIONS



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)



CERTIFIED
9001:2015

