Global Water

PumpStart Xtreme Single Pump Controller

Owner's Operation Manual

Xtreme

PumpStart

For service contact
pumpstart.com.au

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1. SAFETY

The following symbols, accompanied by the words "Danger", "Warning" indicate the potential hazard resulting from failure to observe the associated warning, as specified below.

	DANGER RISK OF ELECTRIC SHOCK	Failure to observe this warning may result in electric shock
	DANGER	Failure to observe this warning may cause personal injury and/or damage to property
	WARNING	Failure to observe this warning may cause damage to the pump, the unit or the system

CAUTION

Make sure the pumps are fully primed before you start them.

CAUTION

Ensure the correct rotation of the pumps.

CAUTION

The control panel must be connected by a qualified electrician in compliance with the electrical regulations in force.

CAUTION

The electrical pump or the motor and the panel must be connected to an efficient in compliance with grounding system in compliance with the electrical regulations in force.

CAUTION

Ground the unit before carrying out any other operation.

CAUTION

The electric pump or the motor can start up automatically.

CAUTION

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. If you must work inside the electrical panel it is also necessary to disconnect the internal battery (installed simultaneously with GSM module).

2. OVERVIEW

The purpose of this manual is to provide the necessary information for the proper installation, use and maintenance of XTREME[1]. 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 (relative humidity 50% at 40°C not condensed).

3. HANDLING

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

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.

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 our dealer as soon as possible, no later than five days from the delivery date.

PumpStart Xtreme Single Pump Controller

4. GENERAL DESCRIPTION

XTREME[1] is an electronic panel for direct start-up of 1 single or three phase pump with dry running protection via cosφ and minimum current, remote management with gsm and app.

GLOBAL WATER shall not be liable for any damage caused or suffered by the unit as a result of its unauthorised or improper use.

GENERAL FEATURES
- multi language
- password
- mains supply return delay
- motor self-test
- protections delay
- 50-60Hz frequency
- various start-up alternations
- motor exclusion
- start delay
- settings via GSM-APP.

GENERAL SETTINGS
- self-learning of motor data
- min-max current (A)
- min cosφ
- start delay setting
- stop delay setting
- max continuous operation
- max start-ups per hour
- max start-ups per minute
- max klixon trips
- service request.

DISPLAY VIEWS
- voltage (V)
- frequency (Hz)
- motor absorption(A)
- motors cosφ
- pulse counter
- running hours
- presence of GSM
- pressure (bar)
- water level (mt)
- last alarms
- service request

ALARMS, ALARMS OUTPUT AND PROTECTIONS
- acoustic alarm mode
- luminous alarm mode
- alarms via relay
- 12V alarm output
- alarm delay
- alarm activation distinction
- min-max water level
- min-max voltage
- phase error
- frequency error
- min-max motor current
- min motor cosφ
- motors klixon trip
- max klixon trips
- water in oil chamber
- max start-ups per hour
- max start-ups per minute
- max continuous operation

DEFAULT OPERATING MODES
CLEAN
min level probe or float switch input
pressure switch or float switch inputs
emptying-filling mode;
4-20mA sensor if present: > level-pressure views on display, > pressure-level alarm setting on display.

DARK
float switch inputs (normal or multi-contact types)
max level float switch input
self-holding
emptying-filling mode
4-20mA sensor if present: > level-pressure views on display, > pressure-level alarm setting on display.

DIGIT
min level probe or float switch input
4-20mA pressure-level probe input
motor start-up pressure-level setting
motor stop pressure-level setting.

PAUSE/WORK
program allows managing the operation of the pump only with two defined timing, independent of the inputs, the pause (downtime pump) and work (pump start-up time).

PumpStart Xtreme Single Pump Controller

5. INSTALLATION

Fix the control panel for a stable support with screws and screw anchor using the holes arranged in the box (fig. 1) or the fixing bracket if present.

To fix the cables in their terminals use a tool of the proper size to avoid the damaging of the screws or of their seat. If use an electric screwdriver and pay attention not to spoil the thread or the screws.

After the fixing, remove every plastic or metallic surplus (eg. Pieces of copper off the cables or plastic shavings of the box) inside the box before suppling power.
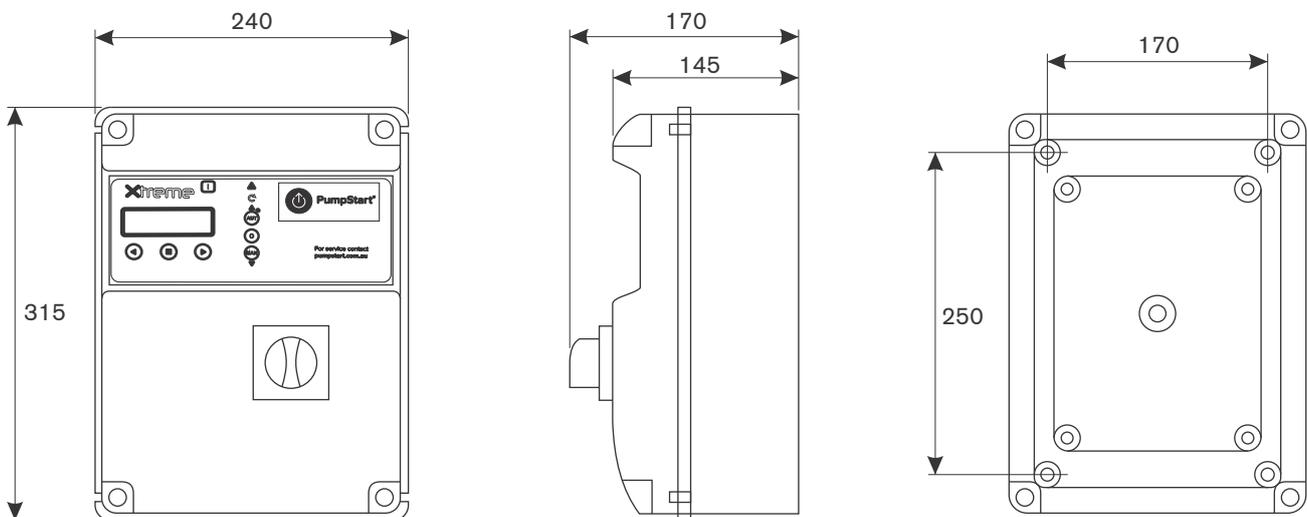
Figure 1

ATTENTION:
The display/sinoptic located on the cover of the control panel is connected through one or more cables (even cable type flat) to electronic control unit installed on the bottom of the control panel.
Pay utmost attention and care by opening the electric panel.
Once opened the control panel, support the cover so as not to damage / tear the connection cables.

NOTE:
Do not install the control panel close to objects in contact with flammable liquids, water or gas.

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 pumps:
(**400V** ± 10% 50/60Hz for **PSSCX.3**)
(**230V** ± 10% 50/60Hz for **PSSCX.1**).
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 a differential circuit breaker switch measured in accordance with the regulations locally in force.

LINE OF MOTOR POWER SUPPLY
Connect the unit at ground before carrying out any other operation.
The voltage input corresponds to the data written on the motors:
(**400V**±10% 50/60Hz **three-phase**)
(**230V**±10% 50/60Hz **single-phase**).
When starting make sure that the motors run in the right direction of rotation, usually indicated by an arrow printed on the motor.

6. LIGHT INDICATIONS AND BUTTONS
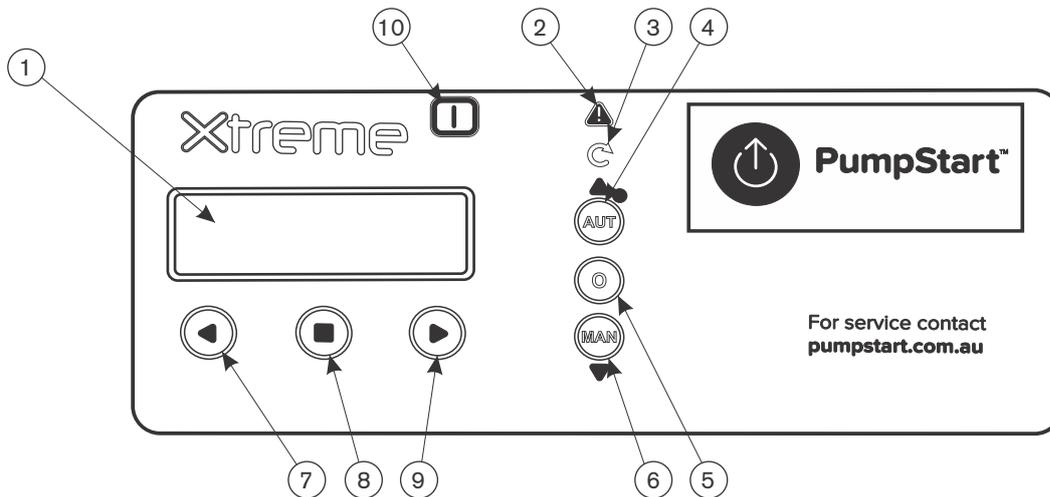
(1) DISPLAY backlit blue to display the parameters of the system

(2) ALARM red led to indicate an alarm is active; when the red led is on it indicates the presence of an alarm and that made the pump stopped

(3) START green led to indicate the pump is currently working. the flashing led indicates it'swaiting for the start timer to expire

(4) AUT+UP button with dual functionality:
- button to activate the auto functional mode; when the green led is on it indicates the auto functional mode is active
- button to move upward in the program menu selection

(5) 0 button to stop the pumps and reset related alarms

(6) MAN+DOWN button with dual functionality:
- button to activate the manual mode of operation;
- button to move downward in the program menu selection

(7) ◀ button to move toward left in the program menu selection

(8) ■ ENTER button to activate/save the menu setting; change display of the menu parameter settings

(9) ▶ button to move toward right in the program menu selection

(10) ON blue led to indicate the voltage is on and the panel is turned on by mains supply

7. DISPLAYS

The overall menu settings are composed of a series of horizontal menus that allows access to sets of horizontal and vertical parameters. As in the following flowchart example:

HORIZONTAL MENU'

VERTICAL PARAMETERS

HORIZONTAL PARAMETERS

NOTE: on the next page shows the complete flow chart programming

When the panel is turned on the display will light up:

MODEL

LANGUAGE

SOFTWARE REVISION YEAR

SOFTWARE REVISION

```
Full.appᵌ  2015
(I)     Rev.XX
```

Subsequently the start-up routine will execute:

```
Full.appᵌ  2015
(I)  WaitXXsec
```

WAIT TIMER DELAY RETURN POWER

At the end of the start-up routine the display will show following default main display:

MAINS FREQUENCY

MAINS VOLTAGE

MEASUREMENT SIGNAL 4-20mA (if enabled) or PAUSE/WORK TIME IN MINUTES FOR EACH PUMP (if activated its plan of operation)

```
XXXV 50Hz 🕐 gsm
Lev 0.00m   Dig
```

SELF-TEST PUMP ACTIVE

GSM PRESENCE

OPERATING MODE

cln= CLEAN
drk= DARK
dig= DIGIT
p/w= PAUSE/WORK

The main default display shows the current working parameters. By pressing the button 🔘 is possible to move to different screens and show the working parameter of the individual pump

CURRENT MEASURED

PUMP 1

COSφ MEASURED

```
P1  X.XA St XXX
Cosφ X.XX h XXX
```

NUMBER OF STARTS

HOURS OF OPERATION

XTREME¹

GENERAL SETTINGS (PG. 11) → SETTINGS PUMPS (PG. 21) → OPERATING PROGRAMS (PG. 27) → GSM MODEM SETTING (PG. 31) → ALARM SETTING (PG. 34) → RESTORE SETTINGS (PG. 37) → PRESS ENTER TO SET-UP EXIT (PG. 10)

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OPERAT. MODE EMPTY/FILL (PG. 28) | ENABLE DARK (PG. 29) | OPERAT. MODE EMPTY/FILL (PG. 29) | ENABLE CLEAN (PG. 29) | OPERAT. MODE EMPTY/FILL (PG. 29)

CONFIGURATION PUMP 1 (PG. 21)

PUMP 1 ALARM DELAY IMAX (PG. 21) | PUMP 1 ALARM DELAY IMIN (PG. 21) | PUMP 1 ALARM DELAY COSφ (PG. 21) | ENABLE MAX CONT. WORKING (PG. 22) | ENABLE MAX START MINUTE (PG. 22) | ENABLE MAX START HOUR (PG. 23)

MAX CONTIN. WORKING (PG. 22) | MAX START PER MINUTE (PG. 23) | MAX STARTS PER HOUR (PG. 24)

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0=BAR 1=MT (PG. 12) | FULL SCALE (PG. 12) | ENABLE MAX 4-20 (PG. 12) | ZERO CALIBR. LEARN / SETS (PG: 12) | MIN. LEV-PRESS (PG. 13)

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SETTING PASSWORD (PG. 20) | LIGHT DISPLAY (PG. 20)

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	PROGRAM PAUSA/LAVORO (PG.30)			
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ENABLE MAX INT. KLIXON (PG. 24)	ENABLE SERVICE REQUEST (PG. 25)	AUTO SETTING PUMP 1 (PG. 26)	MAX CURRENT PUMP 1 (PG. 26)	MIN CURRENT PUMP 1 (PG. 26)	COSφ MIN PUMP 1 (PG. 27)
MAX INT. KLIXON (PG. 24)	PUMP 1 REQUEST SERVICE (PG. 25)	RESET SERVICE PUMP 1 (PG. 25)			

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8. GENERAL OPERATION

To modify the parameter settings of operation the user will need to enter the programming mode, then you must simultaneously press the two buttons ◀ and ▶ until the display shows the following password screen:

```
Password
  0000
```

To continue the correct password is required (the default password is 0000) and press the button ⬛

To enter a new password you need to change the parameter "Password Setting" and press the button ⬛

NOTE: When you enter the programming mode the pumps stop.

To navigate the menus horizontally using the buttons, ◀ ▶ between the vertical parameters keys ▲AUT ▼MAN

To exit the programming menu you need to display the following horizontal menu and press ⬛

```
Press Enter to
 Set-up Exit
```

To quickly return to the main horizontal menu, just press ▲AUT button repeatedly.

NOTE: The exit from the programming menu without saving happens automatically if you do not press any button for 1 minute.

9. PARAMETER SETTING

To modify a parameter the user needs to enter "programming mode" (explained in details in the next section) and then select the desired parameter to be modified:

```
Parameter
 XXXXXX
```

Pressing the ⬛ button will select the digit for modification with a flashing cursor:

```
Parameter
 XXXXXX
```
⟶ FLASHING CURSOR
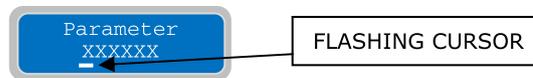
Buttons ▲AUT and ▼MAN will increase or decrease the value of the parameter;

```
Parameter          Parameter
 000000    ▲AUT     100000    ▲AUT
```
```
▲AUT  Parameter    ▼MAN  Parameter
       300000             200000
```
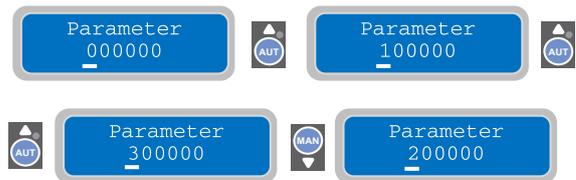
Buttons ▶ and ◀ will move the cursor to the appropriate digits to allow their settings to be changed (the flashing cursor moves to the digit):

```
Parameter          Parameter
 XXXXXX    ▶        XXXXXX    ▶
```
```
▶   Parameter      ◀   Parameter
     XXXXXX              XXXXXX
```

Once the specific parameter is set to the desired value it can be saved by pressing the ⬛ button.
Once the parameter is saved, the display will show briefly the message "save" as confirmation that the setting has been saved.

```
Parameter
 XXXXXX     ⬛      save
```

10. GENERAL SETTINGS

Once entered in the programming mode the first horizontal menu will be:

Press Enter to Set-up Exit	↔	General settings	↔	Settings pumps

Pressing ◀ and ▶ navigate the horizontal menus. With the button [MAN] displays the corresponding vertical parameter:

General settings
↓
Sel.Language: X 1=I 2=EN 3=E 4=F
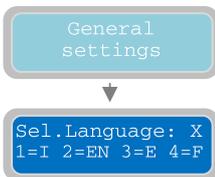
The parameter "Select Language" will set the language selection for the alarm messages to be displayed (the "X" indicates the position of the parameter to modify):
1=Italian; 2=English; 3=Spanish; 4=French.
Factory default selection: 1-Italian.

To move to the next horizontal parameter press the button ▶ (as indicated in the flow-chart attached to this manual as an example, the menu structure of the horizontal parameter is circular; therefore, by pressing the buttons ▶ or the button ◀ to display the following parameter; to facilitate the descriptions of the parameters settings the manual will show the navigation inside the various menus:

Sel.Language: X 1=I 2=EN 3=E 4=F	↔	Delay Power ret. 0=RND XXXsec	↔	Enable 4-20mA 0=NO 1=YES X

Delay Power ret. 0=RND   XXXsec

The parameter "Delay after Power Return" will set the timer delay to wait before reactivating the control panel after a power-cut.
The "X" indicates the digit of the parameter to modify:
The settable range value is from 0 to 999 seconds.
0: setting the value to "0" (0=RND, random) will set the timer delay to a random value automatically (the timer value will be between 1 and 999 seconds) by the control panel at every restart after every power-cut (this function is useful in a station with several control panels XTREME and it's not desired the simultaneous reactivation of several control panels).
Default setting: 3 seconds.

Note: the delay timer to reactivate of the control panel is displayed as a countdown timer to the restart after power-cut. During the countdown the operating functions are inhibited. Therefore, it's not possible to operate the display/settings also it is not possible to use for programming mode, nor manual operation.

To move to the next horizontal parameter press the button ▶ :

Delay Power ret. 0=RND XXXsec	↔	Enable 4-20mA 0=NO 1=YES X	↔	Hi.Flt.Pumps ON 0=NO 1=YES X

Enable 4-20mA 0=NO 1=YES X
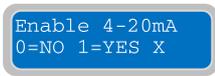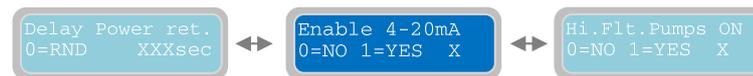
The parameter "Enable 4-20mA" will allow to activate/deactivate the use of the reading device with signal 4-20mA (for example, pressure transducer, piezoresistive sensor, ultrasounds sensor, etc...). The activation of input 4-20mA allows the use of working in operating mode "DIGIT". It is possible to utilize the 4-20mA device even as simple monitor of levels and usage of relative alarms.
The "X" indicates the position of the parameter to modify:
0=NO: input 4-20mA DISABLE.
1=YES: input 4-20mA ENABLE.
Factory default setting: 0 (DISABLE).

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10. GENERAL SETTINGS (continued)

Pressing the button [MAN] will gain access to the set of parameters related to the reading of the input of 4-20mA device:

```
Enable 4-20mA
0=NO 1=YES X
```
▼
```
 0=bar 1=mt
 Value   X
```

In the parameter "bar/mt" is possible to select the unit of measurement used in the display of the signal 4-20 mA. In the case of pressurized system select "bar" (typically requires the connection with a pressure transductor; in the case of a liquid/water select "m" (typically requires a connection with a sensor of pierzoresistive level). The selection of the unit of measurement will result in the display of a level (in meters) or a pressure (in bar).
The "X" indicates the digit position of the parameter to modify:
Factory default setting: 0 (0=bar).

To move to the next horizontal parameter press the button [▶] :

```
 0=bar 1=mt         Full scale        Enable Max 4-20
 Value   X    ⟷      XX.XX      ⟷     0=NO 1=YES X
```

```
 Full scale
   XX.XX
```

The parameter "Full Scale" is used to indicate the full scale of the sensor device 4-20 mA being used (bar or meter depending on the mode selected in the previous parameter).
(The "X" indicates the digit of the parameter to modify).
The range of the value is from 00.00 to 99.99 (bar or meter).
Factory default setting: 16.00.

To move to the next horizontal parameter press the button [▶] :

```
 Full scale       Enable Max 4-20      Zero Calibration
   XX.XX     ⟷    0=NO 1=YES X    ⟷    Learn / Sets
```

```
Enable Max 4-20
0=NO 1=YES X
```

The parameter "Enable Max 4-20" is used to start the pump connected, once the maximum level is reached (the actual value of such maximum level of the sensor 4-20 mA is to be set in the following parameters). In the case of "bar" as   the selected unit of measurement, the maximum level set is to be intended as maximum pressure.
The "X" indicates the digit of the parameter to modify:
0=NO: DISABLE the start of pump once the maximum level is reached.
1=YES: ENABLE the start of pump once the maximum level is reached.
Factory default setting: 0 (DISABLE).

To move to the next horizontal parameter press the button [▶] :

```
Enable Max 4-20     Zero Calibration     min. Lev-Press
0=NO 1=YES X   ⟷    Learn / Sets   ⟷       XX.XX
```

```
Zero Calibration
 Learn / Sets
```

The parameter "Zero Calibration Learn/Sets" is used to choose whether to have an auto setting or manual setting of the RELATIVE zero of the 4-20mA sensor being used. Therefore, it's possible to set the "zero" not at the actual zero level ("0" meters of level or "0" bar of pressure), but at a different level (for example, 2 meters of level or 1 bar of pressure) to always maintain a gauge.

To proceed with the setting of the calibration for relative zero press the button [MAN] :

```
Zero Calibration
 Learn / Sets
```
▼
```
   Learn
Zero: XX.XX
```

The parameter "Learn Zero" will set the value automatically for the relative zero setting.
Pressing the button [O] will set the value automatically as the relative zero of level/pressure at the moment the button is pressed.

10. GENERAL SETTINGS (continued)

To manually set the "relative zero" press the button ▶ :

```
   Learn            Set-up
Zero: XX.XX   ↔   Zero: XX.XX
```

```
  Set-up
Zero: XX.XX
```
The parameter "Set-up Zero" will set the value of the relative zero manually.
The "X" indicates the digit of the parameter to modify.
The range of value is from 00.00 to 99.99 (bar or meters depending on the choice made previously).
Factory default setting: 00.00.

Pressing the button AUT it is possible to continue to program all the parameters relative to the 4-20mA device.

```
Enable Max 4-20       Zero Calibration       min. Lev-Press
0=NO 1=YES X     ↔    Learn / Sets       ↔      XX.XX
```

To move to the next horizontal parameter press the button ▶ :

```
Zero Calibration      min. Lev-Press          Start P1
 Learn / Sets    ↔      XX.XX          ↔       XX.XX
```
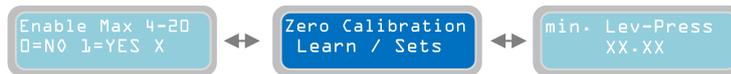
```
min. Lev-Press
   XX.XX
```
The parameter "Min lev-press" will set the level/pressure (in meter or bar depending on the mode previously selected) for which to trigger an alarm. The alarm of minimum level/pressure will stop the pump and will show in the visual display and, depending on the settings of associated menu, it can activate one or more output relays.
(The "X" indicates the digit of the parameter to modify).
The range of value is from 00.00 to 99.99.
Factory default setting: 0.50

To move to the next horizontal parameter press the button ▶ :

```
min. Lev-Press         Start P1              Stop P1
   XX.XX        ↔      XX.XX         ↔       XX.XX
```

```
 Start P1
  XX.XX
```
The parameter "Start P1" will set the level/pressure (in meter or bar depending on the mode previously selected for which to start the Pump 1.
This parameter is usable only in the DIGIT and MULTITANK programming mode, in all other programming modes this parameter is inhibited.
(The "X" indicates the digit of the parameter to modify).
The range of value is from 00.00 to 99.99.
Factory default setting: 1.00

To move to the next horizontal parameter press the button ▶ :

```
 Start P1              Stop P1             Max Lev-press
  XX.XX        ↔      XX.XX         ↔       XX.XX
```

10. GENERAL SETTINGS (continued)

```
 Stop P1
  XX.XX
```

The parameter "Stop P1" will set the level/pressure (in meter or bar depending on the mode previously selected for which to stop the Pump 1.
This parameter is usable only in the DIGIT and MULTITANK programming mode, in all other programming modes this parameter is inhibited.
(The "X" indicates the digit of the parameter to modify).
The range of value is from 00.00 to 99.99.
Factory default setting: 2.00

To move to the next horizontal parameter press the button ▶ :

```
 Stop P1          Max Lev-press       Filter reading
  XX.XX      ⬌      XX.XX        ⬌   Coeff. K= XXX
```

```
Max Lev-press
   XX.XX
```

The parameter "Max Lev-Press" will set the level/pressure (in meter or bar depending on the mode previously selected) for which to trigger an alarm. At the activation of the maximum level/pressure alarm it is possible to start the pump by setting the parameter "Enable Max 4-20mA" (please refer to the section "Enable Max 4-20mA"). In addition to the displayed alarm, depending on the settings of the associated menu, it is possible to activate one or more output relays.
(The "X" indicates the digit of the parameter to modify).
The range of value is from 00.00 to 99.99.
Factory default setting: 10.00

To move to the next horizontal parameter press the button ▶ :

```
Max Lev-press      Filter reading      0=bar 1=mt
   XX.XX      ⬌   Coeff. K: XXX   ⬌   Value   X
```

```
Filter reading
Coeff. K: XXX
```

In parameter "Filter reading" you can increase / decrease the delay of the reading of 4-20 mA signal: setting a low value reading signal will be faster, with a higher value will become slower. Increase this coefficient is particularly useful in cases in which the reading signal (pressure / Level) of the sensor becomes unstable maybe because of rapid changes in pressure / Level.
(The "X" indicates the digit of the parameter to modify).
The range of value is from 0 to 200.
Factory default setting: 50.

At this point the set of parameters associated to the input reading are complete. By pressing the button [AUT] it is possible to return to the previous vertical parameter "Enable 4-20mA":

```
Delay Power Ret    Enable 4-20mA       Hi.Flt.Pumps ON
0=RND    XXXsec ⬌  0=NO 1=YES X   ⬌   0=NO 1=YES X
```

To move to the next horizontal parameter press the button ▶ :

```
Enable 4-20mA      Hi.Flt.Pumps ON     Hi.Flt.Pumps ON
0=NO 1=YES X   ⬌   0=NO 1=YES X   ⬌   0=NO 1=YES  X
```
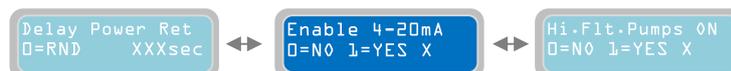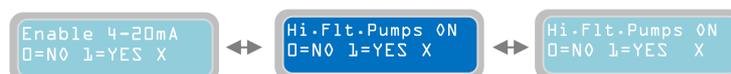
10. GENERAL SETTINGS (continued)

`Hi.Flt.Pumps ON`
`0=NO 1=YES  X`

In parameter " Hi.Flt.Pumps ON " you can decide the functionality of the alarm float. The alarm float (or more generally a consensus alarm, that is a dry contact closure at which the alarm is activated) must be physically connected to the XTREME framework (see section "Electric connections").
The "X" indicates the digit of the parameter to modify:
1=YES: the activation of the alarm float you will have the alarm signal and depending on the operating mode selected (see parameters menu "mode of operation") on emptying the start of all pumps available (respecting the parameter "contemporary maximum pump ") while on filling the stop of the pumps.
0=NO: the activation of the alarm float switch will cause only trigger the alarm signal.
Factory default setting: 0.

To move to the next horizontal parameter press the button ▶ :

`Hi.Flt.Pumps ON`   ↔   `Stop Delay`   ↔   `Enable Alarm`
`0=NO 1=YES  X`   `XXsec`   `Voltage 0=NO X`

`Stop Delay`
`XXsec`

The parameter "Stop Delay" will set a time delay on the stopping of the pumps after the stopping condition is met; for example, the opening of a stop flow switch /pressure switch (for operating modes Dark, Clean, Multitank). Therefore, once the trigger is set for the stopping condition the pumps will continue to work for the amount of time set in this parameter. The Stop Delay setting will be the same for all the pumps installed. If during the Stop Delay time a condition for a "minimum level/pressure" is met then all the pumps will stop (for operating mode CLEAN).
The "X" indicates the digit of the parameter to modify.
The range of time delay start is from 0 to 99 seconds.
Factory default setting: 1 sec

To move to the next horizontal parameter press the button ▶ :

`Stop Delay`   ↔   `Enable Alarm`   ↔   `Setting Alarm`
`XXsec`   `Voltage 0=NO X`   `Vmax    XXX V`

`Enable Alarm`
`Voltage 0=NO X`

With the parameter "Enable Alarm Voltage" it is possible to activate/deactivate the alarm relative to the Mains Power Voltage of the control panel XTREME (Vmax e Vmin). This alarm will:
- Stop all pumps from working
- Display the alarm
- It can activate the output relay alarm (depending on the setting of the associated menu)
The "X" indicates the digit of the parameter to modify.
0=NO: by setting "0" the Voltage alarm is disabled
1=YES: by setting "1" the Voltage alarm is enabled.

To move to the next horizontal parameter press the button ▶ :

`Enable Alarm`   ↔   `Setting Alarm`   ↔   `Setting Alarm`
`Voltage 0=NO X`   `Vmax    XXX V`   `Vmin    XXX V`

`Setting Alarm`
`Vmax    XXX V`

The parameter "Setting Alarm Vmax" will set a voltage threshold over which, if enabled, will trigger the alarm.
The "X" indicates the digit of the parameter to modify.
The range of value is from 400 to 460V for XTREME-T and from 230 to 260V for XTREME-M.
Factory default setting: 440V (XTREME-T); 253V (XTREME-M).

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10. GENERAL SETTINGS (continued)

To move to the next horizontal parameter press the button ▶ :

```
Setting Alarm          Setting Alarm          Delay alarm
Vmax     XXX V    ↔    Vmin     XXX V    ↔    voltage  XXsec
```

```
Setting Alarm
Vmin     XXX V
```
The parameter "Setting Alarm Vmin" will set a voltage threshold under which, if enabled, will trigger the alarm.
The "X" indicates the digit of the parameter to modify.
The range of value is from 340 to 400V for XTREME-T and from 200 to 230V for XTREME-M.
Factory default setting: 360V (XTREME-T); 207V (XTREME-M)

To move to the next horizontal parameter press the button ▶ :

```
Setting Alarm          Delay alarm            Set Freq. Main
Vmin     XXX V    ↔    voltage  XXsec    ↔    50/60Hz  XXHz
```

```
Delay alarm
voltage  XXsec
```
The parameter "Delay Alarm Voltage" will set a delay time on the activation of the voltage's alarm (if previously enabled); the trigger condition (over/under voltage) must persist for the length of time set in this parameter in order to trigger the alarm.
For example, if the Delay Alarm is set to 10 seconds and the trigger condition persists continuously for 10 seconds it will activate the alarm; if the trigger condition persists for less than 10 seconds the alarm will not activate.
The "X" indicates the digit of the parameter to modify.
The range of value is from 0 to 99 seconds.
Factory default setting: 5 sec

To move to the next horizontal parameter press the button ▶ :

```
Delay alarm            Set Freq. Main         Max Difference
voltage  XXsec    ↔    50/60Hz  XXHz    ↔     Freq.   X Hz
```

```
Set Freq. Main
50/60Hz   XXHz
```
The parameter "Set Frequency Main 50/60 Hz" will set Mains Frequency of the control panel XTREME.
The "X" indicates the digit of the parameter to modify.
The range of value is from 50 to 60 Hz.
Factory default setting: 50Hz.

To move to the next horizontal parameter press the button ▶ :

```
Set Freq. Main         Max Difference         Delay Alarm
50/60Hz  XXHz     ↔    Freq.   X Hz     ↔     Freq.   XXsec
```
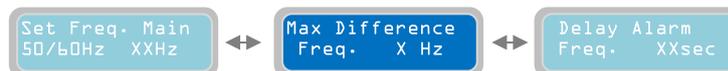
```
Max Difference
Freq.   X Hz
```
The menu "Max Difference Frequency" will set the value (in Hz) of maximum deviation tolerable from the nominal value of frequency that has been set. The value being set is for both positive and negative deviation; for example, with nominal frequency being set at 50Hz, a deviation of max frequency set to 2Hz will set the tolerable limits between 52Hz (50+2=52) and 48Hz (50-2=48).
The "X" indicates the digit of the parameter to modify.
The range of value is from 1 to 5Hz.
Factory default setting: 2 Hz.
Note: it is not possible to disable the alarm related to the frequency; it's always enable.

10. GENERAL SETTINGS (continued)

To move to the next horizontal parameter press the button ▷ :

```
Max Difference        Delay Alarm          Self-Test pumps
 Freq.   X Hz   ↔    Freq.   XXsec   ↔    0=NO  XXX  h
```

```
Delay Alarm
Freq.   XXsec
```

The parameter "Delay Alarm frequency" will set a time delay for the activation of the Frequency alarm (if previously enabled); the trigger condition (over/under frequency) must persist for the length of time set in this parameter in order to have the alarm signal.
For example, if the Delay Alarm is set to 10 seconds and the trigger condition persists continuously for 10 seconds it will activate the alarm; if the trigger condition persists for less than 10 seconds the alarm will not activate.
The "X" indicates the digit of the parameter to modify.
The range of value is from 0 to 99 seconds.
Factory default setting: 2 sec

To move to the next horizontal parameter press the button ▷ :

```
Delay Alarm           Self-Test pumps      Time test
Freq.   XXsec   ↔    0=NO  XXX  h    ↔    Pumps   XX sec
```

```
Self-Test pumps
0=NO  XXX  h
```

In parameter "Self-Test pumps" is possible to set the time interval with which the control panel XTREME will perform the periodic self-test operation of the pumps (used to prevent pumps from locking up after long periods of inactivity caused by the conditions installation).
On the screen appears the symbol ⏱ indicating the activation of the self-test, or the symbol ⊠ until the self-test is in progress. The count begins from the moment the Self is activated then this parameter to change the time once activated it is necessary enter programming mode and press 2 times the button ▣ on this screen. In case of power failure or warehousing the remaining time it is stored.
The "X" indicates the digit of the parameter to modify
The range of value is from 0 to 999 hours.
0=NO: setting "0" the self-test pumps is disabled.
Factory default setting: 0

To move to the next horizontal parameter press the button ▷ :

```
Self-Test pumps       Time test            Tasto MANUALE
0=NO  XXX  h    ↔    Pumps   XX sec  ↔    0=INSTABL  X
```

```
Time test
Pumps   XX sec
```

The parameter "Time Test Pumps" will set the duration of the self-test. In the situation where the self-test is triggered on "minimum level open" (for the operating mode Dark, Clean, Multitank) or trigger on the level of deactivation from signal 4-20 mA (for operating mode DIGIT), the self-test will last at maximum 3 seconds regardless of the value set in this parameter.
The "X" indicates the digit of the parameter to modify
The range of value is from 0 to 99 seconds.
Factory default setting: 5 seconds.
Note: the self-test will be executed with the following logic:
-start pump 1; operation for the time being set; stop pump 1; start pump 2; operation for the time being set; stop pump 2.

To move to the next horizontal parameter press the button ▷ :

```
Time test             Manual Mode          Turn-Off MANUAL
Pump   XX sec   ↔    0=INSTABL  X    ↔    0=ON    XXXsec
```

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10. GENERAL SETTINGS (continued)

The parameter "MANUAL Mode" will set the operating mode of the buttons "MAN" for the manual operation of the pumps.
The "X" indicates the setting of the parameter to modify
0=UNSTABL: setting "0" the MAN button should be pressed, this indicated "Operator Presence": the pumps will work while the button MAN is being pushed; when the button is released the pumps will stop.
Setting "1" the operation of the pumps will continue for a programmable time (next parameter "Turn-off MANUAL") even after the release of the MAN button. When the timer elapses the pumps will stop.
Factory default setting: 0.
Note: when using the mode "Operator Presence" the operation of the pumps will bypass the protections that have been set (it is therefore necessary to verify that the manual operation will not damage the pumps). On the other hand, the operation mode "Turn-Off MANUAL" is subject to the protection settings.

To move to the next horizontal parameter press the button ▶ :

```
Manual Mode          Turn-Off MANUAL      Restart Setting
0=INSTABL  X    ↔    0=ON    XXXsec   ↔   Restart1 XXX min
```

The parameter "Turn-off MANUAL" will set the operating time of the pumps after the button MAN has been pressed (only if the "MANUAL Mode" has been set to "1").
Shutdown requires pressing the button 0.
The "X" indicates the setting of the parameter to modify.
The range of value is from 0 to 999 seconds.
Factory default setting: 5 seconds.
Note: if it is set to "0" the operating mode will be "at continuous/infinite time" (the "Turn-Off MANUAL" operating mode is subject to the protection settings).

To move to the next horizontal parameter press the button ▶ :

```
Turn-Off MANUAL      Restart Setting      Restart Setting
0=ON    XXXsec   ↔   Restart1 XXX min ↔   Restart2 XXX min
```
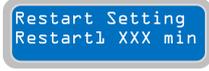
The parameter "Restart Setting, Restart 1" related to the Dry Running alarm (the alarm of Dry Running is always enabled and it will trigger when it measures an operating cosφ smaller than the minimum cosφ being set (parameter "cosφ min pump" under the horizontal parameter "Pump parameters") or a pump current consumption smaller than the value of the minimum current (parameter "Min Current pump" set in the horizontal menu "Pump parameters"). It is possible to set the delay timer for the automatic restart after the alarm for dry running condition. The delay time value being set is valid for all the pumps installed.
The "X" indicates the setting of the parameter to modify.
The range of value is from 1 to 999 minutes.
Factory default setting: 5 minutes.
Note: every time there is a dry running condition alarm there will be a corresponding alarm output (one or more alarms based on the current setting refer to menu "Alarm settings").

To move to the next horizontal parameter press the button ▶ :

```
Restart Setting      Restart Setting      Restart Setting
Restart1 XXX min ↔   Restart2 XXX min ↔   Restart3 XXX min
```

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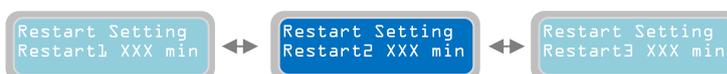
10. GENERAL SETTINGS (continued)

`Restart Setting
Restart2 XXX min`

The parameter "Restart Setting, Restart 2", as previous parameter, is related to the Dry Running alarm. It is possible to set the timer delay for the automatic restart after the first timer delay alarm for Dry Running condition. If the alarm for Dry condition is still detected after the first restart of the pump the pump will be restarted again after restart timer 2. The time delay value being set is valid for all the pumps installed.
The "X" indicates the setting of the parameter to modify.
The range of value is from 1 to 999 minutes and it's independent from restart time 1.
Factory default setting: 30 minutes.

To move to the next horizontal parameter press the button ▶ :

`Restart Setting
Restart2 XXX min` ↔ `Restart Setting
Restart3 XXX min` ↔ `Restart Setting
Restart4 XXX min`

`Restart Setting
Restart3 XXX min`

The parameter "Restart Setting, Restart 3", as previous 2 parameters, is related to the dry running alarm. It is possible to set the timer delay for the automatic restart after the third Dry running alarm. If the alarm for Dry condition is still detected after the first and second restart of the pump the pump will be restarted again using the time setting of restart setting, "Restart 3". The delay time value being set is valid for all the pumps installed.
The "X" indicates the setting of the parameter to modify.
The range of value is from 1 to 999 minutes and it's independent from restart time 2.
Factory default setting: 60 minutes.

To move to the next horizontal parameter press the button ▶ :

`Restart Setting
Restart3 XXX min` ↔ `Restart Setting
Restart4 XXX min` ↔ `Exclude Restart
0=NO 1=YES ->X`

`Restart Setting
Restart4 XXX min`

The parameter "Restart Setting, Restart 4", as previous 3 parameters, is related to the dry running alarm. It is possible to set the timer delay for the automatic restart after the 4th dry running alarm . If the alarm for Dry condition is still detected after the first three restarts of the pump the pump will be restarted again using the time setting restart setting ,restart 4. The delay time value being set is valid for all the pumps installed.
The "X" indicates the setting of the parameter to modify.
The range of value is from 1 to 999 minutes and it's independent from restart time 3.
Factory default setting: 90 minutes.

To move to the next horizontal parameter press the button ▶ :

`Restart Setting
Restart4 XXX min` ↔ `Exclude Restart
0=NO 1=YES ->X` ↔ `Light Display
Off XXXsec`

`Esclus. Ripart.
0=NO 1=SI ->X`

The parameter "Exclude Restart" will set the command for the control panel to continue to make restarts after the 4th one or to stop restarting.
0=NO: setting "0" the control panel will continue to restart the pumps with the 4th timer delay setting (i.e. restart the pumps at intervals equal to the parameter set in the "Restart Setting, Restart 4") infinitely.
1=YES setting "1" after the 4th restart of the pump, if the alarm for dry condition is still active the control panel will stop the operation of the pump (or pumps) and it will wait for the "operator manual reset" (manual operation to control the conditions of the system).
The "X" indicates the setting of the parameter to modify.
Factory default setting: 0.

10. GENERAL SETTINGS (continued)

To move to the next horizontal parameter press the button [▶] :

```
Esclus. Ripart.        Light Display          Setting
0=NO 1=SI  ->X   ◄►    Off   XXXsec    ◄►   Password XXXX
```

```
Light Display
 Off   XXXsec
```

The parameter "Light Display Off" will set the amount of time of inactivity before the display will turn off automatically (power saving mode) from the last button pressing. If the display is momentarily off in power saving mode, it will go back on after pressing any button.

Note: pressing of buttons [◄] , [▶] , [■] will not have any effect on the operation of program settings of XTREME[1]; however, pressing other buttons could modify the operations of the pumps.
The "X" indicates the setting of the parameter to modify.
The range of value is from 5 to 250 seconds.
Factory default setting: 60 seconds.
Note: It is not possible to keep the display always On (maximum 250 seconds after last button pressing).

To move to the next horizontal parameter press the button [▶] :

```
Light Display           Setting           Sel.Language: X
 Off   XXXsec    ◄►   Password XXXX   ◄►   1=I 2=EN 3=E 4=F
```

```
  Setting
Password XXXX
```

The parameter "Setting Password" allows the user to set/modify the password to access the programming menu.
The "X" indicates the setting of the parameter to modify.
It's possible to a set a password of 4 digits.
Factory default password is "0000".

To return to the first horizontal parameter press the button [▶] :

```
  Setting            Sel.Language: X        Delay Power Ret.
Password XXXX   ◄►   1=I 2=EN 3=E 4=F   ◄►   0=RND     XXXsec
```

At this point the horizontal menu "General Settings" has been programmed and it is possible to proceed to next menu.

To go back to the horizontal menus press the button [AUT] and the "General Settings" menu will be displayed again

```
Press Enter to          General          Settings pumps
Set-up Exit     ◄►      settings     ◄►
```

Press the button [▶] again to move to the next horizontal menu "Settings Pump"

11. SETTING PUMP

```
   General          Settings pumps        Operating
   settings         ◄►                    Programs
                    ◄►
```

Press the button [MAN▼] to display the underneath vertical parameter:

```
Settings pumps
       ▼
Configuration
Pump1
```
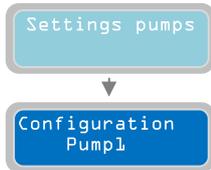
With the vertical parameter "Configuration pump 1" is possible to set all the parameters relative to pump 1.

From the menu "Configuration Pump 1", pressing the button [MAN▼] will display the following vertical parameter:

```
Configuration
Pump1
       ▼
P1 Alarm Delay
IMax XXsec
```
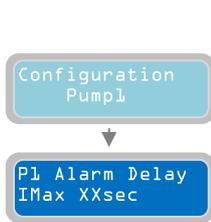
The parameter "P1 Alarm Delay I max" will set the time delay for the activation of the alarm for maximum current consumption (overcurrent): the threshold must be crossed (overcurrent) for the amount of time specified for the alarm to trigger and to stop the pump.
For example, if the alarm time delay is set to 10 seconds then the threshold is crossed continuously for 10 seconds for the alarm to activate; if the threshold is crossed for less than 10 seconds alarm will not activate.
The "X" indicates the setting of the parameter to modify.
The range of value is from 5 to 15 seconds.
Factory default setting: 5 seconds.

To move to the next horizontal parameter press the button [▶] :

```
P1 Alarm Delay       P1 Alarm Delay        P1 Alarm Delay
IMax XXsec     ◄►    IMin XXsec      ◄►    Cosφ XXsec
```

```
P1 Alarm Delay
IMin XXsec
```

The parameter "P1 Alarm Delay I min" will set the time delay for the activation of the alarm for minimum current consumption (undercurrent): the threshold must be crossed (undercurrent) for the amount of time specified for the alarm to trigger and to stop the pump.
For example, if the alarm time delay is set to 10 seconds and the threshold is crossed continuously for 10 seconds for the alarm to activate; if the threshold is crossed for less than 10 the alarm will not activate.
The "X" indicates the setting of the parameter to modify.
The range of value is from 1 to 120 seconds.
Factory default setting: 3 seconds.

To move to the next horizontal parameter press the button [▶] :

```
P1 Alarm Delay       P1 Alarm Delay        Enable Max Cont.
IMin XXsec     ◄►    Cosφ XXsec      ◄►    Working 0=NO X
```

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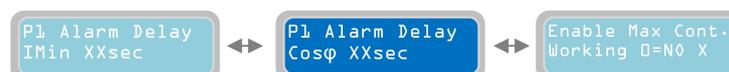
11. SETTING PUMP (continued)

`P1 Alarm Delay`
`Cosφ XXsec`

The parameter "P1 Alarm Delay Cosφ" will set the time delay for the activation of the alarm for minimum Cosφ (the lowering of the Cosφ value is an indication that the pump is not sucking water and it's working in dry condition): the threshold must be crossed (dry running condition) for the amount of time specified for the alarm to trigger and to stop the pump.
For example, if the alarm time delay is set to10 seconds and the threshold is crossed continuously for 10 seconds for the alarm to activate; if the threshold is crossed for less than 10 seconds the alarm will not activate.
The "X" indicates the setting of the parameter to modify.
The range of value is from 1 to 120 seconds.
Factory default setting: 3 seconds.

To move to the next horizontal parameter press the button [▷] :

`P1 Alarm Delay` `Cosφ XXsec` ⟷ `Enable Max Cont.` `Working 0=N0 X` ⟷ `Enable Max Start` `Minute 0=N0 X`
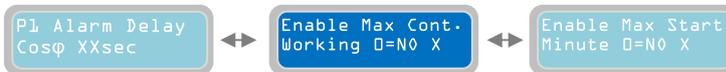
`Enable Max Cont.`
`Working 0=N0 X`

The parameter "Enable Max Continuous working operation" will enable/disable the alarm for the maximum continuous operation of the pump. When enabled and the pump is continuously working for a period of time over the value set then the alarm will be activated and the pump will be stopped. The functional operation of the pump will be inhibited until the reset of the alarm (pressing the button [O] of the pump in "status of alarm").
The "X" indicates the setting of the parameter to modify.
0=NO: setting "0" will disable the alarm for max continuous working condition of the pump.
1=YES: setting "1" will enable the alarm for max continuous working condition of the pump.
Factory default setting: 0 (disable).

To set the maximum time of continuous operation of the pump is necessary to pass to the parameter "Max Continuous working" by pressing [MAN▼] :

`Enable Max Cont.`
`Working 0=N0 X`
↓
`Max Continuous`
`working XXXXmin`

The parameter "Max Continuous working" will set maximum time of continuous working operation of the pump. If the pump works continuously for a period of time longer than the set value then the pump will be stopped and the alarm will trigger. The functional operation of the pump will be inhibited until the reset of the alarm (pressing the button [O] of the pump in status of alarm).
The "X" indicates the setting of the parameter to modify.
The range of value is from 1 to 9999 minutes.
Factory default setting: 1440 minutes (24hours).

To continue programming the parameters of the pump press the button [AUT] to go back to the parameter "Enable Max Cont. working":
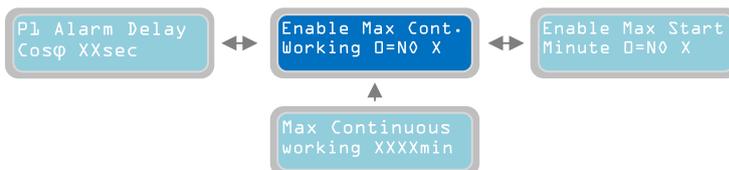
`P1 Alarm Delay` `Cosφ XXsec` ⟷ `Enable Max Cont.` `Working 0=N0 X` ⟷ `Enable Max Start` `Minute 0=N0 X`
↑
`Max Continuous` `working XXXXmin`

To move to the next horizontal parameter press the button [▷] :

`Enable Max Cont.` `Working 0=N0 X` ⟷ `Enable Max Start` `Minute 0=N0 X` ⟷ `Enable Max Start` `Hour 0=N0 X`
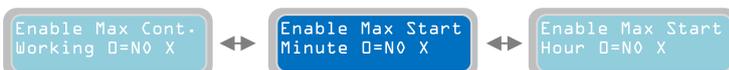
11. SETTING PUMP (continued)

```
Enable Max Start
Minute ▯=NO X
```

The parameter "Enable Max Start Minute" will enable/disable the alarm for the maximum number of starts per minute of the pump. When enabled and the pump executes a number of starts per minute higher than the set value "Max Starts per Minute" the alarm will activate and the pump will stop. The functional operation of the pump will be inhibited until the reset of the alarm. The reset of the alarm will happen automatically at the end of the minute.
The "X" indicates the setting of the parameter to modify.
0=NO: setting "0" will disable the alarm for max number of starts per minute of the pump.
1=YES: setting "1" will enable the alarm for max number of starts per minute of the pump.
Factory default setting: 1.

Press the button [MAN] to move to the menu for setting the maximum number of starts per minute ("Max Starts per Minute"):

```
Enable Max Start
Minute ▯=NO X
        ▼
Max Starts
per Minute   X
```

The parameter "Max Starts per Minute" will set the pump's maximum number of starts per minute. If the pump executes a number of starts per minute higher than the set value it will be stopped and an alarm will activate. The functional operation of the pump will be inhibited until the reset of the alarm. The reset of the alarm will happen automatically at the end of the minute.
The "X" indicates the setting of the parameter to modify.
The range of value is from 1 to 9.
Factory default setting: 9.

To continue programming the parameters of the pump press the button [AUT] to go back to the parameter "Enable Max Start Minute":

```
Enable Max Cont.   ◀▶   Enable Max Start   ◀▶   Enable Max Start
Working ▯=NO X            Minute ▯=NO X            Hour ▯=NO X
                              ▲
                         Max Starts
                         per Minute   X
```

To move to the next horizontal parameter press the button [▶] :

```
Enable Max Start   ◀▶   Enable Max Start   ◀▶   Enable Max Int.
Minute ▯=NO X            Hour ▯=NO X            Klixon ▯=NO X
```

```
Enable Max Start
Hour ▯=NO X
```
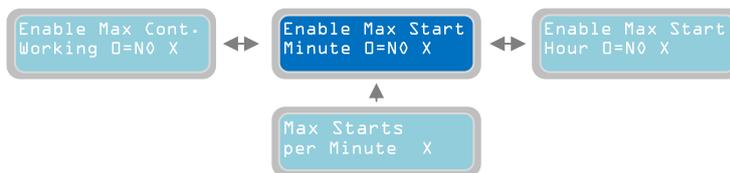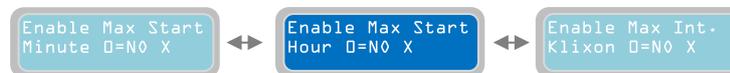
The parameter "Enable Max Start Hour" will enable/disable the alarm for the maximum number of starts per hour of the pump. When enabled and the pump executes a number of starts per minute higher than the set value "Max Starts per Hour" the alarm will activate and the pump will stop. The functional operation of the pump will be inhibited until the reset of the alarm. The reset of the alarm will happen automatically at the end of the Hour.
The "X" indicates the setting of the parameter to modify.
0=NO: setting "0" will disable the alarm for max number of starts per hour of the pump.
1=YES: setting "1" will enable the alarm for max number of starts per hour of the pump.
Factory default setting: 0 (disable).

Press the button [MAN] to move to the menu for setting the maximum number of starts per hour ("Max Starts per Hour"):

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11. SETTING PUMP (continued)

```
Enable Max Start
Hour □=N0 X
```
⬇
```
Max Starts
per Hour   XX
```
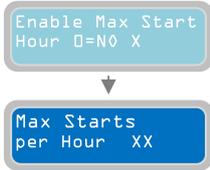
The parameter "Max Starts per Hour" will set the pump's maximum number of starts per hour. If the pump executes a number of starts per hour higher than the set value it will be stopped and an alarm will activate. The functional operation of the pump will be inhibited until the reset of the alarm. The reset of the alarm will happen automatically at the end of the hour.
The "X" indicates the setting of the parameter to modify.
The range of value is from 1 to 99.
Factory default setting: 6.

To continue programming the parameters of the pump press the button [AUT] to go back to the parameter "Enable Max Start Hour":

```
Enable Max Start     Enable Max Start     Enable Max Int.
Minute □=N0 X    ↔   Hour □=N0 X      ↔   Klixon □=N0 X
                          ⬆
                     Max Starts
                     per Hour   XX
```

To move to the next horizontal parameter press the button [▶] :

```
Enable Max Start     Enable Max Int.      Enable Service
Hour □=N0 X      ↔   Klixon □=N0 X    ←   Request □=N0 X
```

```
Enable Max Int.
Klixon □=N0 X
```
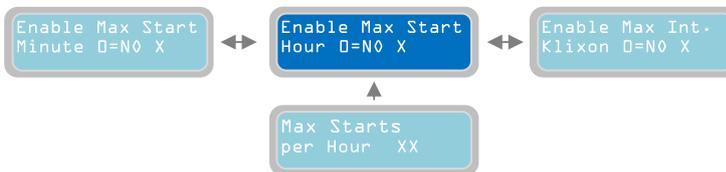
The parameter "Enable Max Interventions Klixon" will enable/disable the alarm for the maximum number of Klixon events for the pump. When enabled and the number of Klixon events on the pump is higher than the set value in the parameter "Max Intervention Klixon" the alarm will be activated and the pump will stop. The functional operation of the pump will be inhibited until the reset of the alarm. The Klixon is a thermal protection circuit breaker (available only on some types of pumps) inserted in the motor to prevent overheating (typically due to an excessive number of starts within a short period of time or due to a defective cooling system of the motor). Typically it is a bimetallic circuit breaker that provides a contact normally closed that would open in case of overheating. The re-closing of the contact (and reactivation of Klixon) is automatic once the temperature has dropped, below the value determined not to be harmful to the system.
The "X" indicates the setting of the parameter to modify.
0=NO: setting "0" will disable the alarm for the maximum number of Klixon events
1=YES: setting "1" will enable the alarm for the maximum number of Klixon events
Factory default setting: 0 (disable).

Press the button [MAN] to move to the menu for setting the maximum number of interventions Klixon ("Max Intervention Klixon P1"):

```
Enable Max Int.
Klixon □=N0 X
```
⬇
```
Max Intervention
Klixon P1 nXX
```
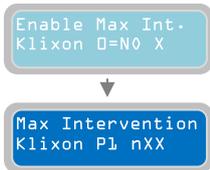
The parameter "Max interventions Klixon P1" will set the max number of Klixon events that the pump can handle. If the number of Klixon events is higher than the set value the pump will be stopped and therefore the alarm will activate (XTREME will sum the Klixon events independently from the frequency of starts over time; the alarm will happen even if the number of events is reached over a long period of time). The functional operation of the pump will be inhibited until the reset of the alarm.
The "X" indicates the setting of the parameter to modify.
The range of value is from 1 to 10.
Factory default setting: 10.

To continue programming the parameters of the pump press the button [AUT] to go back to the parameter "Enable Max Int. Klixon":
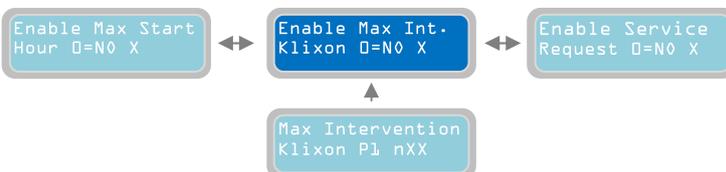
```
Enable Max Start     Enable Max Int.      Enable Service
Hour □=N0 X      ↔   Klixon □=N0 X    ↔   Request □=N0 X
                          ⬆
                     Max Intervention
                     Klixon P1 nXX
```

11. SETTING PUMP (continued)

To move to the next horizontal parameter press the button ▶ :

```
Enable Max Int.        Enable Service        Auto Setting
Klixon 0=N0 X   ◆▶    Request 0=N0 X   ◆▶   Pump1 (I&Cosφ)
```

```
Enable Service
Request 0=N0 X
```
The parameter "Enable Service Request" will enable/disable the alarm for the service maintenance of the pump. When it is enabled the pump will work and the pump works for a number of hours higher than the set value in the parameter "P1 Request Service" there will be an alarm for maintenance/substitution of the pump. The pump will not be stopped and it will continue to work normally. The alarm will be displayed and it will be possible to activate one or more alarm outputs (based on the setting in the menu "Alarms Setting").
The "X" indicates the setting of the parameter to modify.
0=NO: setting "0" will disable the alarm for service request.
1=YES: setting "1" will enable the alarm for service request.
Factory default setting: 0 (disable).

Press the button ⬇MAN to move to the menu for setting the maximum number of working hours ("P1 Request Service"):
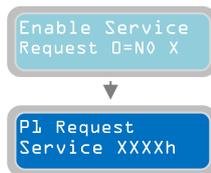
```
Enable Service
Request 0=N0 X
      ▼
P1 Request
Service XXXXh
```
The parameter "P1 Request Service" will set the maximum number of working hours for the pump before the service request alarm is activated. The alarm will be displayed and it will be possible to activate one or more alarm output (based on the setting in the menu "Alarms Setting").
The "X" indicates the setting of the parameter to modify.
The range of value is from 1 to 9999 hours.
Factory default setting: 1000h.

Press the button ▶ to move to the next horizontal parameter "Reset Service P1":

```
P1 Request              Reset
Service XXXXh   ◆▶    Service P1 XXXX
```

```
    Reset
Service P1 XXXX
```
The parameter "Reset Service P1" will show the number of hours until the for maintenance service request alarm will be activated.

Press the button ◉ to update the time remaining for the next service with the pump's duration of work already executed (the value will be displayed on the parameters "h XXX"). At this point the next service request will happen after "time set on the parameter P1 service request" + "work time on the operating parameter". If there is no "Reset Service P1" and the time it is simply set via "P1 Request Service", the maintenance service request alarm will activate considering the number of work hours already executed. For example, if the pump has already worked for 200h and the "P1 Request Service" was set to 1000h and there was no reset of P1. Then, the service request alarm will activate once the 1000h of work are reached, meaning in 800h (1000-200=800h). If the reset of service P1 is done, the service request alarm will at 1200h of work hours (200+1000=1200h). To figure out the time remaining for the service request it is necessary to verify the number of hours indicated on the parameter "Reset Service P1" and subtract the number of hours displayed on the operating parameter "h XXX".

Press the button ⬆AUT to go back to the horizontal parameter "Enable Service Request":

```
Enable Max Int.        Enable Service        Auto Setting
Klixon 0=N0 X   ◆▶    Request 0=N0 X   ◆▶   Pump1 (I&Cosφ)
                            ▲
                        Reset
                    Service P1 XXXX
```

11. SETTING PUMP (continued)

To move to the next horizontal parameter press the button ▷ :

```
Abilita rich.      Auto settaggio      Corrente Max
service 0=N0 X  ↔  Pompa1 (I&Cosφ)  ↔  Pompa 1  XX.XA
```
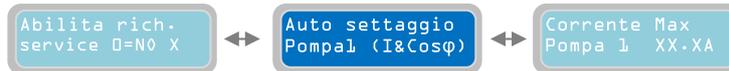
Auto Setting Pump1 (I&Cosφ)	The parameter "Auto Setting pump 1" is to set the control panel automatically for the main electrical parameters of the pump. When pressing the button ☐ the pump will start and will work for 10 seconds; in this period of time the control panel XTREME will read the electrical parameters of the pump (current, Cosφ). After the 10 seconds the values read will be automatically saved. **WARNING**: *the auto setting of the pump is executed independently from the conditions of the system (pump flow closed, consents of operation whether active or not, etc ...).* *To avoid damage to the pump and the electrical parameters erroneous readings, before making the auto setting make sure that the working conditions of the pump are the best ones.* Note: based on the measurements of current and cosφ during the auto setting XTREME will set the following parameters automatically: -"I Min" is set as 60% of the current measured during the auto setting. -"I max" is set as 120% of the current measured during the auto setting. -"Cosφ Min" is set as 80% of the cosφ measured during the auto setting.

If the Auto Setting of the parameters of the pump is not desired, it is possible to set manually the values with the following parameters.

To move to the next horizontal parameter press the button ▷ :

```
Auto Setting       Max Current        Min Current
Pump1 (I&Cosφ)  ↔  Pump 1  XX.XA  ↔  Pump 1  XX.XA
```

Max Current Pump 1 XX.XA	The parameter "Max Current Pump 1" will set the maximum value of current consumption allowed (overcurrent). Beyond the set value (for the duration specified in the parameter "P1 Delay Alarm Imax") the pump will stop and will display an alarm (Maximum current) and it will be possible to activate one or more alarm output (based on the setting in the menu "Alarms Setting"). The "X" indicates the setting of the parameter to modify. The range of value is from 00.1 to 99.9 A. Factory default setting: 00.0 A.

To move to the next horizontal parameter press the button ▷ :

```
Max Current        Min Current        Cosφ Min
Pump 1  XX.XA  ↔  Pump 1  XX.XA  ↔  Pump 1  X.XX
```

Min Current Pump 1 XX.XA	The parameter "Min Current Pump 1" will set the minimum value of current consumption allowed (undercurrent). Below the set value (for the duration specified in the parameter "P1 Delay Alarm Imin") the pump will stop and will display an alarm (Minimum current) and it will be possible to activate one or more alarm output (based on the settings in the menu "Alarms Setting"). The "X" indicates the setting of the parameter to modify. The range of value is from 00.1 to 99.9 A. Factory default setting: 00.0 A.

To move to the next horizontal parameter press the button ▷ :

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11. SETTING PUMP (continued)

```
Min Current        Cosφ Min          Copy Settings
Pump 1  XX.XA      Pump 1  X.XX      --> Pump 2
```

```
Cosφ Min
Pump 1  X.XX
```

The parameter "Cosφ Min pump 1" will set the minimum allowed value of cosφ while the pump is operating (the lowering of the Cosφ value is an indication that the pump is not sucking water and it is working in dry condition. If the cosφ value is lower than the value set (for the duration specified in the parameter "P1 Delay Alarm Cosφ") the pump will stop, and will display an alarm (Dry running condition) and it will be possible to activate one or more outputs alarm (based on the settings in the menu "Alarms Setting").
The "X" indicates the setting of the parameter to modify.
The range of value is from 0.20 to 0.99.
Factory default setting: 0.20.

At this point the horizontal menu "Settings Pump" has been fully programmed and you can proceed to the next menu.

To go back to the horizontal menu "Settings Pump" press the button [AUT].

```
General            Settings           Operating
Settings           Pumps              Programs
```

Press again the button [▷] to move to the next horizontal menu "Operating Programs":

12. OPERATING PROGRAMS

```
Settings           Operating          GSM Modem
Pumps              Programs           Setting
```

Press the button [MAN] to display the vertical parameter: Program
PAUSE/WORK

```
Operating
Programs
   ↓
Program            Program            Program            Program
DARK               CLEAN              DIGIT              PAUSE/WORK
```
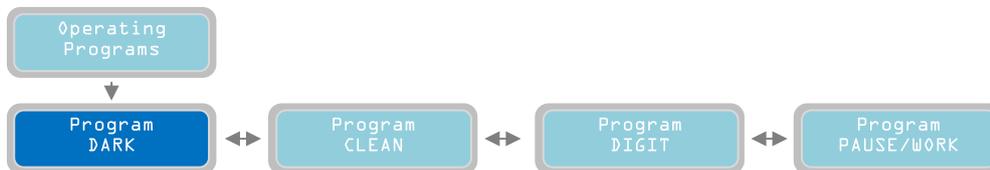
In this part of the of control panel setting it's possible to choose the program operating mode for the pumps. Four program operating modes are available:
- Program DARK
- Program CLEAN
- Program DIGIT
- Program PAUSE/WORK

The first operating mode is the program DARK (to select a different program mode just press the buttons [▷] and [◁] to move in the horizontal menu of programs).

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12. OPERATING PROGRAMS (continued)

Program DARK

Inside the menu "Program DARK" is possible to activate/deactivate the operating mode "Dark" for the pumps (this operating mode will apply to all the pumps connected). The program Dark is particularly suitable for systems managing waste water (this program mode can also be used for clean water system). Especially suitable for a system using float switches, the program Dark can be used also with generic dry contacts. The main characteristic of operation of the program Dark is that the pumps start is controlled via a start float switch and its operation will continue even after the "start switch" deactivation. The stopping of the pump is controlled by the activation of its stop float switch.

Program CLEAN

Inside the menu "Program CLEAN" is possible to activate/deactivate the operating mode "Clean" for the pumps (this operating mode will apply to all the pumps connected). The program Clean is particularly suitable for systems managing clean water (this program mode can also be used for waste water system). Especially suitable for system using either pressure switches or float switches, the program Clean can be used also with generic dry contacts. With the program Clean the starting and stopping of the pumps are controlled via the start float switch; it is possible to connect to a minimum level float switch as additional protection against dry running operation.

Program DIGIT

Inside the menu "Program DIGIT" is possible to activate/deactivate the operating mode "DIGIT" for the pumps (this operating mode will apply to all the pumps connected). The program DIGIT allows the starting and stopping of the pumps based on a signal coming from 4-20 mA device (for example, level piezoresistive sensor, electronic pressure transducer,…). It is possible to control the starting and stopping of the pumps based on some levels/pressures programmable by the operator.

Program PAUSE/WORK

Inside the menu "Program PAUSE/WORK" is possible to activate/deactivate the operating mode "PAUSE/WORK". The program PAUSE/WORK allows managing the operation of the pumps only with two timing, independent of the inputs, defined for each pump, the pause (downtime pump) and work (pump start-up time), modified in the following pages with units measuring in minutes.
The program PAUSE / WORK is particularly suitable in systems with pumps inserted in different tanks and / or which work with predetermined intervals.

NOTE: regardless of the program operating mode selected, it is always possible to connect to a 4-20mA device to display the level/pressure and to alarm for minimum/maximum level/pressure. In addition, with the program operating mode DIGIT it is also possible to set the actual levels/pressure values to control the pumps

To proceed and set all the parameters of the operating mode DARK press the button 🔘 :

Program DARK

▼

Operating mode Empty/Fill X

The parameter "Operating mode Empty/Fill" will set the mode of the program "Dark" to "empty" or "fill". With "Empty" the start/stop float switches of the pumps are inside the tank in which the pump is installed. With "Fill" the start/stop float switches are in a different tank from which the pumps are installed.
The "X" indicates the setting of the parameter to modify.
0=EMPTY
1=FILL
Factory default setting: 0 (Empty).

To move to the next horizontal parameter press the button ▶ :

Operating mode Empty/Fill X ◀▶ **Enable DARK**

12. OPERATING PROGRAMS (continued)

Enable DARK

The parameter "Enable DARK" will enable/disable the program operating mode Dark. Once enabled the mode Dark it will apply to all the installed pumps.

To enable the operating mode Dark press the button [ ] to save its setting. The display will show briefly the message "save" as confirmation that the setting has been saved. In the main display the word "drk" will show to indicate the selected program operating mode.

The setting of all the parameters for the program operating mode Dark is complete.

Refer to section "INSTALLATION EXAMPLES" for directions of the connections and the applications of the mode DARK.

Similarly to the previous program operating mode, it is possible to select "Program CLEAN" and set all its parameters.

To proceed and set all the parameters of the operating mode Clean press the button [MAN] :

Program CLEAN

Operating mode Empty/Fill   X
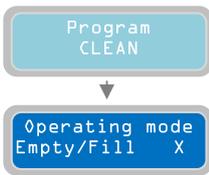
The parameter "Operating mode Empty/Fill" will set the mode of the program "Clean" to "empty" or "fill". Typically with "Empty" the start/stop float or pressure switches of the pumps are inside the tank in which the pump is installed. With "Fill" the start/stop float or pressure switches are in a different tank from which the pumps are installed.
The "X" indicates the setting of the parameter to modify.
0=EMPTY
1=FILL
Factory default setting: 0 (Empty).

To move to the next horizontal parameter press the button [ ] :

Operating mode Empty/Fill   X   ↔   **Enable CLEAN**

Enable CLEAN

The parameter "Enable CLEAN" will enable/disable the program operating mode Clean. Once enabled the mode CLEAN it will apply to all the installed pumps.

To enable the operating mode Clean press the button [ ] to save its setting. The display will show briefly the message "save" as confirmation that the setting has been saved. In the main display the word "cln" will show to indicate the selected program operating mode.
Factory default setting: CLEAN enable.

The setting of all the parameters for the program CLEAN operating mode is complete.

Refer to section "INSTALLATION EXAMPLES" for directions of the connections and the applications of the mode CLEAN.

Similarly of the previous program operating mode, it is possible to select "Program DIGIT" and set all its parameters.

To proceed and set all the parameters of the operating mode DIGIT press the button [MAN] :

Program DIGIT

Operating mode Empty/Fill   X
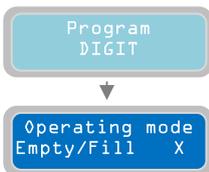
The parameter "Operating mode Empty/Fill" will set the mode of the program "Digit" to "empty" or "fill". Typically with "Empty" the 4-20 mA devices are inside the tank in which the pump is installed. Typically, with "Fill" the 4-20 mA devices are in a different tank from which the pumps are installed.
The "X" indicates the setting of the parameter to modify.
0=EMPTY
1=FILL
Factory default setting: 0 (Empty).

To move to the next horizontal parameter press the button [ ] :

12. OPERATING PROGRAMS (continued)

```
  Operating mode          Enable
  Empty/Fill   X          DIGIT
```

```
  Enable
  DIGIT
```

The parameter "Enable DIGIT" will enable/disable the program operating mode DIGIT. Once enable the mode DIGIT it will apply to all the installed pumps.

To enable the operating mode DIGIT press the button [ ] to save its setting. The display will show briefly the message "save" as confirmation that the setting has been saved. In the main display the word "Dig" will show to indicate the selected program operating mode.

NOTE: the setting of the alarm level/pressure and commands of the pumps of operating mode DIGIT are under the submenu "Enable 4-20 mA" of the menu "General Settings". The setting of the level/pressure needs to be consistent with the logical of operating mode selection (empty or fill).

The setting of all the parameters for the program operating mode DIGIT is complete.

Refer to section "INSTALLATION EXAMPLES" for directions of the connections and the applications of the mode DIGIT.

Similarly of the previous program operating mode, it is possible to select "Program PAUSE/WORK" and set all its parameters.

To proceed and set all the parameters of the operating mode PAUSE/WORK press the button [MAN] :

```
  Program
  PAUSE/WORK
```

```
  Starting cycle
  Pause/Work   X
```
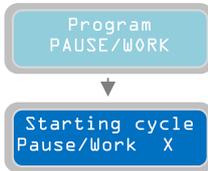
With the parameter "Starting cycle Pause/Work" is possible to select if the operating program "PAUSE/WORK" must start the operating cycle from the pause time or work time.
The "X" indicates the setting of the parameter to modify.
0=PAUSE
1=WORK
Factory default setting: 0.

To move to the next horizontal parameter press the button [ ] :

```
  Starting cycle          Pause Time
  Pause/Work   X          P1    XXXmin
```

```
  Pause Time
  P1    XXXmin
```

With the parameter "Pause Time P1" is possible to set the duration of the pause time in the operation of the pump P1.
The "X" indicates the setting of the parameter to modify.
The range of value is from 1 to 999 minutes.
Factory default setting: 200.

To move to the next horizontal parameter press the button [ ] :

```
  Pause Time              Work Time
  P1    XXXmin            P1    XXXmin
```

```
  Work Time
  P1    XXXmin
```

With the parameter "Work Time P1" is possible to set the duration of working time in the operation of the pump P1.
The "X" indicates the setting of the parameter to modify.
The range of value is from 1 to 999 minutes.
Factory default setting: 100.

To move to the next horizontal parameter press the button [ ] :

12. OPERATING PROGRAMS (continued)

```
   Work Time          Enable
P1    XXXmin        PAUSE/WORK
```

```
  Enable
PAUSE/WORK
```

With the parameter "Enable PAUSE/WORK" is possible to activate/deactivate the operating program PAUSE/WORK. Once activated, the program operation PAUSE/WORK will be active for all the pumps installed.
To activate the operating program PAUSE/WORK or simply restart the cycle just press the button [O] to save the setting. The display will briefly display "save" to indicate has been saved. In the basic screen of the display will show "p/w" to indicate the operating program selected.

NOTE: *a) By pressing the button [AUT] the corresponding timer starts, by pressing [O] stops*

b) Holding down the button [O] for 2 sec recharges the corresponding timer of the current state

c) If you change the operating logic or press the enter button on the page 'Enable PAUSE/WORK' reloads all timers and the status of starting

d) If you change only pause or work times of a pump are reloaded timers restarting the pump from the current state

e) Each time the panel is turned on, is recharged the time of the status interrupted.

At this point the horizontal menu "Operation Programs" has been fully programmed and you can proceed to the next menu.

To go back to the horizontal menu "Operation Programs" press the button [AUT].

```
  Settings        Operating        GSM Modem
   Pumps          Programs          Setting
```

Press the button [▷] to move to the next horizontal menu "GSM Modem Setting"

13. GSM MODEM SETTING

```
Programmi di      GSM Modem          Alarms
Funzionamento      Setting          Setting
```

Press the button [MAN] to visualize the underneath vertical parameter:

```
GSM Modem
 Setting
    ▼
Station Name
XXXXXXXXXX
```
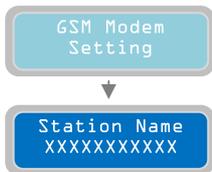
With the vertical parameter "Station Name" is possible to give a name the control panel/system. The name will show in the SMS reply every time there will be a GSM connection test (see following parameters).
Factory default setting: "Test gsm ok".

NOTE: Before configuring the GSM modem wait almost 1 minute after turning on the panel in order to successfully complete its startup routine. To proceed must be present inside the SIM.

13. GSM MODEM SETTING (continued)

By pressing buttons [AUT ▲] and [MAN ▼] is possible to select uppercase, lowercase and numbers.

To move to the next horizontal parameter press the button [▶] :

```
Station Name        Enable Modem        Phone nr.1
XXXXXXXXXX    ↔     YES/NO X       ↔    +XXXXXXXXXX
```

```
Enable Modem
YES/NO X
```

The parameter "Enable Mode" will enable/disable the modem GSM functionality.
The "X" indicates the setting of the parameter to modify.
0=MODEM DISABLE
1=MODEM ENABLE
Factory default setting: 0 (Enable).
Once the modem is enabled the main display will show "gsm" on the top right corner to indicate the modem is present and enabled. In case the modem is enabled but it's not physically present inside the control panel then the display "gsm" will not appear in the main display.

To move to the next horizontal parameter press the button [▶] :

```
Enable Modem         Phone nr.1          Phone nr.2
YES/NO X       ↔    +XXXXXXXXXX    ↔    +XXXXXXXXXX
```

```
Phone nr.1
+XXXXXXXXXX
```

The parameter "Phone nr.1" will set the first (3 in total) phone number to send the SMS messages for the status and alarms as well as the phone number allowed to remotely control the various parameter settings. The number needs to be entered with international prefix (for example, +44…..) without any spaces.
Note: there is no priority among the 3 phone numbers; they are independent from each other.
Factory default setting: +0000000000.

To move to the next horizontal parameter press the button [▶] :

```
Phone nr.1          Phone nr.2          Phone nr.3
+XXXXXXXXXX    ↔    +XXXXXXXXXX    ↔    +XXXXXXXXXX
```

NOTE: If an invalid number is entered the procedure of sending SMS messages will be aborted also for the successive numbers. Correct or disable the number and then turn off and on the panel.

```
Phone nr.2
+XXXXXXXXXX
```

The parameter "Phone nr.2" will set the second (3 in total) phone number to send the SMS messages for the status and alarms as well as the phone number allowed to remotely control the various parameter settings. The number needs to be entered with international prefix (for example, +44…..) without any spaces.
Factory default setting: +0000000000.

To move to the next horizontal parameter press the button [▶] :

```
Phone nr.2          Phone nr.3          Connection Test
+XXXXXXXXXX    ↔    +XXXXXXXXXX    ↔    SMS number 1
```

```
Phone nr.3
+XXXXXXXXXX
```

The parameter "Phone nr.3" will set the third and last phone number which to send the SMS messages for the status and alarms as well as the phone number allowed to remotely control the various parameter settings. The number needs to be entered with international prefix (for example, +44…..) without any spaces.
Factory default setting: +0000000000.

To move to the next horizontal parameter press the button [▶] :

13. GSM MODEM SETTING (continued)

```
Telefono n.3        Connection Test      Connection Test
+XXXXXXXXXX   ⟷    SMS number 1    ⟷   SMS number 2
```

```
Connection Test
SMS number 1
```

The parameter "Connection Test SMS number 1" will verify that the communication between the modem GSM and the "Phone nr.1" is working. To verify it, press the button 🔘 which will send an SMS message immediately from the modem GSM. The text of the message is described in setting "Station Name".

NOTE: when the setting to enable/disable the modem GSM is changed (change of parameter "Enable Modem") it is necessary to exit the programming and re-enter prior to test the connections.

To move to the next horizontal parameter press the button ▶ :

```
Connection Test        Connection Test      Connection Test
SMS number 1     ⟷    SMS number 2    ⟷   SMS number 3
```

```
Connection Test
SMS number 2
```

Similarly to the previous parameter, "Connection Test SMS number 2" will verify that the communication between the modem GSM and the "Phone nr.2" is working. To verify it, press the button 🔘 which will send an SMS message immediately from the modem GSM. The text of the message is described in setting "Station Name".

To move to the next horizontal parameter press the button ▶ :

```
Connection Test        Connection Test        Station Name
SMS number 2     ⟷    SMS number 3    ⟷     XXXXXXXXXX
```

```
Connection Test
SMS number 3
```

The parameter "Connection Test SMS number 3" will verify that the communication between the modem GSM and the "Phone nr.3" is working. To verify it, press the button 🔘 which will send an SMS message immediately from the modem GSM. The text of the message is described in setting "Station Name".

NOTE: the GSM card has an LED to verify the network operator presence (see chapter "GSM" on page 40).

At this point the horizontal menu "GSM Modem Setting" has been fully programmed and it's possible to proceed to the next menu.

To go back to the horizontal menu press the button [AUT], we are back to horizontal menu "GSM Modem Setting":

```
Operating            GSM Modem              Alarms
Programs      ⟷     Setting        ⟷      Setting
```

Press again the button ▶ to move to next horizontal menu "Alarms Setting"

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14. ALARM SETTING

```
┌──────────────┐     ┌──────────────┐     ┌──────────────┐
│  GSM Modem   │ ◄─► │    Alarms    │ ◄─► │   Restore    │
│   Setting    │     │   Setting    │     │   Settings   │
└──────────────┘     └──────────────┘     └──────────────┘
```

Press the button 〔MAN▼〕 to display the vertical parameter:

```
┌──────────────┐
│    Alarms    │
│   Setting    │
└──────────────┘
        ▼
┌──────────────┐   ┌──────────────┐   ┌──────────────┐   ┌──────────────┐
│Configuration │◄─►│Configuration │◄─►│Configuration │◄─►│Configuration │
│Sound Alarm   │   │Visual Alarm  │   │Relay 1       │   │GSM Alarm     │
└──────────────┘   └──────────────┘   └──────────────┘   └──────────────┘
```
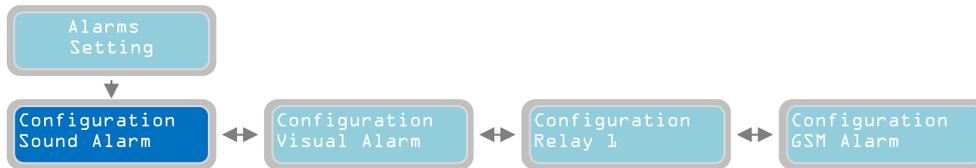
In this part of the programming it is possible to select the operating mode for the alarm outputs available:
- Sound Alarm
- Visual Alarm
- Relay 1
- GSM Alarm

The first alarm output on the list is the Sound Alarm (to move to a different alarm output just press the buttons ▶ and ◀ to navigate on the horizontal menu).

```
┌──────────────┐
│Configuration │
│Sound Alarm   │
└──────────────┘
```

The vertical parameter "Configuration Sound Alarm" will set the operating mode of the audio alarm output on the control panel. It is an output voltage 12 Vcc, max 30 mA) with faston connector (see page 40). This is set-up to be connected to a buzzer alarm but it could be used for any other device with the following electrical characteristics: 12 Vcc, 30 mA max.

Press the button 〔MAN▼〕 to configure the Sound Alarm:

```
┌──────────────┐
│Configuration │
│Sound Alarm   │
└──────────────┘
        ▼
┌──────────────┐
│     Mode     │
│0=NO 1=Y 2=P X│
└──────────────┘
```
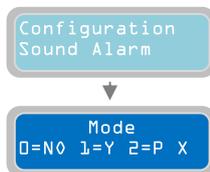
The parameter "Mode" will select the operating mode of the sound alarm output.
The "X" indicates the setting of the parameter to modify.
0=NO (Off)
1=YES in the presence of an alarm (among the selected in the next parameter) the alarm output is on and the connected device will activate.
In the absence of an alarm the output is off and the connected device is turned off.
2=PULSED: in the presence of an alarm (among the selected in the next parameter) the alarm output is on with intermittent pulses and the connected device will activate intermittently.
In the absence of an alarm the output is off and the connected device is turned off
Factory default setting: 1

To move to the next horizontal parameter press the button ▶ :

```
┌──────────────┐     ┌──────────────┐
│     Mode     │ ◄─► │Configuration │
│0=NO 1=SI 2=P X│     │XXXXXXXXXXXXXX│
└──────────────┘     └──────────────┘
```

```
┌──────────────┐
│Configuration │
│XXXXXXXXXXXXXX │
└──────────────┘
```

The parameter "Configuration" sound alarm output is possible to set which alarms will activate the output (with mode described in the previous parameter).
The "X" indicates the setting of the parameter to modify.
Factory default setting: 100111111100110.

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14. ALARM SETTING (continued)

It is possible to activate the sound alarm output (and also all the other alarm outputs described later) for 15 types of alarms. One or more alarms can be activated as desired. To activate an alarm set the value from "0" to "1" in the following table

ALARM ON		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		1	1	1
ALARM OFF		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		*not be disabled*		
1	V Min, V Max																			
2	Phase Seq., Min Hz, Max Hz																			
3	4-20 mA device malfunction																			
4	Min level																			
5	Max level																			
6	Pump 1 alarms																			
7	Pump 2 alarms																			
8	Pump 3 alarms																			
9	I Min, cosφ Min																			
10	I max																			
11	Service																			
12	Max start per minute, Max start per hour																			
13	Max Klixon interventions																			
14	Detection of water in oil chamber																			
15	Max continous working																			
16	*(only whit GSM modem)* Absence/Return mains																			
17	*(only whit GSM modem)* Black-out Max level																			
18	*(only whit GSM modem)* Low battery																			

NOTE: the alarms in gray are automatically sent only if is mounted GSM modem.
There is no need any configuration and it's not possible to disable these features.

For example, the mask "100110000000000" will activate the following alarms: V Min, V Max, Min Level e Max Level.

The XTREME¹ always shows to display each alarm detected, but it will activate the alarm output only if it's configured properly.

N.B.: The alarms "I Min, cos φ Min", "I max", "Service Request", "Max Starts per Minute/Hour", "Intervention Klixon", "Water in Oil Chamber" e "Max Continuous Operation", TO BE ACTIVATED, MUST BE ASSOCIATED TO AT LEAST ONE PUMP; THERE MUST BE ACTIVE AT LEAST ONE OF THE "ALARMS PUMP".

To go back to the horizontal menu press the button [AUT] . Back to the horizontal menu "Configuration Sound Alarm":

```
Configuration      Configuration      Configuration
GSM Alarm     ↔    Sound Alarm   ↔    Visual Alarm
```

Press the button [▷] to move to the configuration of the next alarm output :

```
Configuration      Configuration      Configuration
Sound Alarm   ↔    Visual Alarm  ↔    Relay 1
```

```
Configuration
Visual Alarm
```
The vertical parameter "Configuration Sound Alarm" will set the operating mode of the visual alarm output on GSM card (therefore, GSM option must be present). It is an output voltage 12 Vcc, max 30 mA) with faston connector (see page 41). This is set-up to be connected to a flashing alarm but it could be used for any other device with the following electrical characteristics: 12 Vcc, 30 mA max.
Factory default setting: 100111111100110.

14. ALARM SETTING (continued)

NOTE: for the setting of the Visual alarm output please refer the description of the Sound alarm output.

To go back to the horizontal menu press the button [AUT] . Back to the horizontal menu "Configuration Visual Alarm":

```
Configuration          Configuration          Configuration
Sound Alarm     ⬌      Visual Alarm    ⬌      Relay 1
```

Press the button [▶] to move to the configuration of the next alarm output :

```
Configuration          Configuration          Configuration
Visual Alarm    ⬌      Relay 1         ⬌       GSM Alarm
```

```
Configuration
Relay 1
```

The vertical parameter "Configuration Relay 1" will set the operating mode of the Q1 alarm output on the control panel. It is an output relay with changeover contact (voltage free) with screw terminals connectors (see page 40) (electric contacts characteristics: 250Vac, 5A in AC1). The following contacts will be present in the terminals:
-COM: common
-N.C.: contact normally closed
-N.A.: contact normally open
The output can be used to send the status of alarm to a device with dry contacts or to drive via relay contacts a device to be activated with a separate power supply.

NOTE: to set the relay 1 alarm output please refer to the sound alarm output configuration setting section.

To go back to the horizontal menu press the button [AUT] . Back to the horizontal menu "Configuration Relay 1":
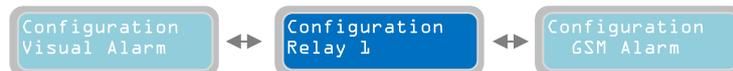
```
Configuration          Configuration          Configuration
Visual Alarm    ⬌      Relay 1         ⬌       GSM Alarm
```

Press the button [▶] to move to the configuration of the next alarm output :

```
Configuration          Configuration          Configuration
Relay 1         ⬌       GSM Alarm      ⬌      Sound Alarm
```

```
Configuration
 GSM Alarm
```

The vertical parameter "Configuration GSM Alarm" it is possible to define which alarms will be send to the phone numbers specified in the menu "Setting GSM Modem".

Press the button [MAN] to configure the GSM Alarm:

```
Configuration
 GSM Alarm
     ▼
    Mode
1=Tel1 2=Tel2 X
```

The parameter "Mode" of the GSM Alarm will set the mode to send the SMS messages of alarm.
Every GSM Modem installed in the XTREME can manage up to a maximum of 3 phone numbers;
This "Mode" parameter will set which phone numbers to send the SMS Alarms.
The "X" indicates the setting of the parameter to modify.
0=NOT IN USE (no SMS alarm will be sent)
1=Send SMS only to "Phone nr.1"
2=Send SMS only to "Phone nr.2"
3=Send SMS to "Phone nr.1" and "Phone nr.1"
4=Send SMS only to "Phone nr.3"
5=Send SMS to "Phone nr.1" and "Phone nr.3"
6=Send SMS to "Phone nr.2" and "Phone nr.3"
7=Send SMS to "Phone nr.1", "Phone nr.2", and "Phone nr.3".
Factory default setting: 0.

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14. ALARM SETTING (continued)

To move to the next horizontal parameter press the button ⊳ :

```
       Mode          ↔   Configuration
1=Tel1 2=Tel2 X           XXXXXXXXXXXXXX
```

```
Configuration
XXXXXXXXXXXXXX
```
With the parameter "Configuration" GSM Model alarm output is possible to set which alarms will trigger the sending of the SMS messages (with the Mode previously described)
The "X" indicates the setting of the parameter to modify.
Factory default setting: 000000000000000.

NOTE: to set the GSM alarm output please refer to the sound alarm output configuration setting section

To go back to the horizontal menus press the button [AUT] and the "Alarms Setting" menu will be displayed again

```
GSM Modem     ↔    Alarms      ↔    Restore
Setting            Setting           Settings
```

Press again the button ⊳ to move to next horizontal menu "Restore Settings"

15. RESTORE SETTINGS

```
 Alarms     ↔    Restore     ↔   Press Enter to
Setting          Settings         Set-up Exit
```

Press the button [MAN] to display the vertical parameter:
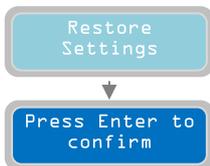
```
Restore
Settings
   ↓
Press Enter to
confirm
```
On the "Enter to confirm" can be performed restore all the programming parameters to the default status that is the initial factory settings.

To confirm, simply press the button ⊙ to which will correspond an instant restart of the software.
This option is particularly useful if it is desired to change the parameters of the system without having to control all of.

16. ALARM LIST

ALARM		CAUSE	REMEDY
Max Continuous Working Pump X	R	The pump indicated has reached the continuous operation time set by parameter: 'Max Continuos Working' (p. 24)	Check the system or the function of the inputs
Max Starts per Minute Pump X	R	The pump indicated has reached the number of starts in a minute set with parameter: 'Max Starts per Minute' (p. 24)	Check the system or the function of the inputs
Max Starts per Hour Pump X	R	The pump indicated has reached the number of starts per hour set with parameter: 'Max Starts per Hour' (p. 24)	Check the system or the function of the inputs
Water in the Oil Chamber Pump X	R	The contact of the sensor inside the pump indicated detects the presence of water in the oil chamber	Check pump
Operation Klixon Pump X	A	The klixon contact of the pump indicated is open	Check pump or jumper the input if not used
Dry Running Pump X	R	The pump indicated has absorbed the minimum current value set by parameter: 'Min Current PX (p. 28) for the time set with the parameter: 'PX Alarm Delay Imin '(p. 23) or reached the minimum value of cosφ set by parameter: 'Cosφ Min PX' (p. 28) for the time set with the parameter: 'PX Alarm Delay cosφ' (p. 23)	Check the fluid level in the pump suction or repeat the autoset parameters
Overcurrent Pump X	R	The pump indicated has absorbed the maximum current set with the parameter: 'Max Current PX (p. 27) for the time set with the parameter: PX Alarm Delay Imax' (p. 23)	Check the pump and repeat the self parameter setting
Power Failure Alarm	A	Alarm on APP sent only with GSM module present and active	Check connections or cable connections of power to the panel
Abnormal Frequency (Hz)	A	The supply frequency has exceeded the limits set by the parameter: 'Max Difference Freq.' (P. 17) for the time set with the parameter: 'Delay Alarm Freq.' (P. 17)	Verify and monitor the power frequency to the panel
Wrong Phase Sequence Alarm	R	Incorrect phase sequence of the supply voltage (This alarm only XTREME-T)	Check the connections or cables or reverse two phases of power to the panel
Phase Loss Alarm	R	Absence of a phase of the supply voltage (This alarm only XTREME-T)	Check connections or cable connections of power to the panel
Maximum Voltage Vmax Alarm	R	The supply voltage has exceeded the maximum value set by parameter: 'Setting Alarm Vmax' (p. 16) for the time set with the parameter: 'Delay Alarm Voltage' (p. 16)	Verify and monitor the supply voltage of the panel
Minimum Voltage Vmin Alarm	R	The supply voltage was above the minimum set by parameter: 'Setting Alarm Vmin' (p. 16) for the time set with the parameter: 'Delay Alarm Voltage' (p. 16)	Verify and monitor the supply voltage of the panel
Max Lev-Press Alarm	A	The alarm input at the highest level/pressure is closed	Check the installation or operation of alarm devices
Min Lev-Press Alarm	A	The alarm input of a minimum level/pressure is opened	Check the installation or operation of alarm devices
4÷20mA Sensor Disconnected	R	The sensor input is not connected	Check sensor or the polarity of the cable connection
Anomaly to the 4÷20mA Sensor	R	The measurement sensor never varies	Check sensor or the polarity of the cable connection
Pump X Disconnected	R	The pump indicated does not absorb current though there is a request to start	Check connections or cable connections power the pumps
Service Request Pump X	R	The pump indicated has exceeded the number of working hours required for the maintenance set with the parameter: 'PX Request Service' (p. 26)	Service the pump

X = variable that the system replaces with the number of the pump.
R = *RETENTIVE* (requires a manual reset even if the cause of the alarm disappears)
A = *AUTORESET* (reset the alarm if it disappears the cause)

17. ELECTRIC CONNECTIONS

Connection of the control signals and protection on the main board

SOUND
ALARM OUTPUT
(12V-30mA)

DEVICE
4-20mA
INPUT

RELAY 1
ALARM OUTPUT
(dry contacts)

COMMANDS AND PROTECTION
PUMPS INPUTS
(the connections change
depending on the operating mode;
see installation examples section)

PROBE FOR WATER IN OIL
CHAMBER PUMP 1 INPUT

KLIXON ALARM CONTACT
(NC) PUMP 1 INPUT
(ponticellare se non si collega)

MAX LEVEL ALARM
CONTACT (NO) INPUT
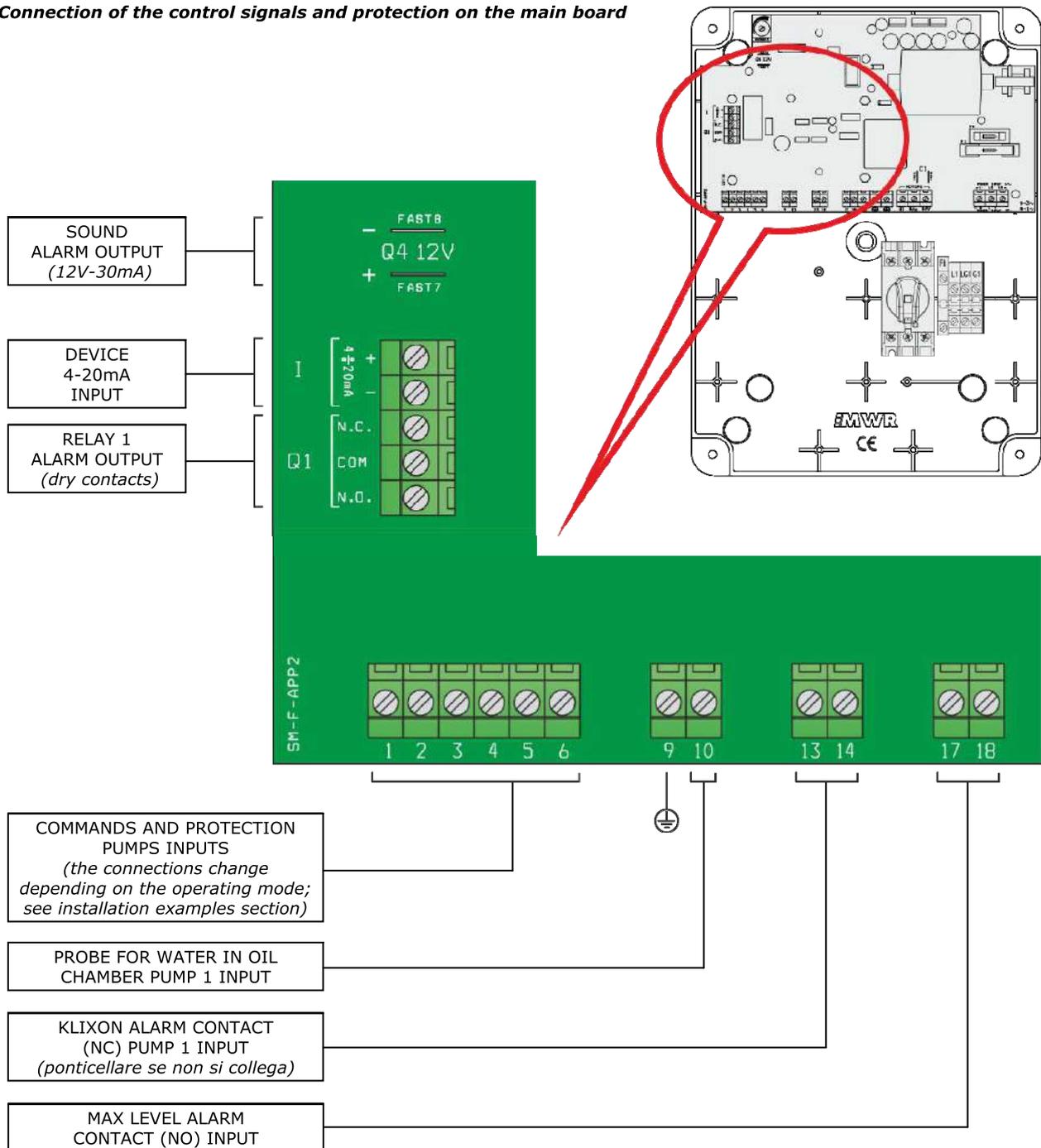
NOTE: For proper operation of the water in the oil chamber detections probes (if installed), make sure that the earth (PE) of the pumps is equipotential to the earth (PE) of the control panel.

17. ELECTRIC CONNECTIONS (continued)

Connection of the alarm and protection signals on the GSM board
Quad-Band GSM 850/900 / 1800/1900 MHz - which operates in 2G
(optional board)

NOT USED INPUT

SUPPLY BOARD *(230-400Vac)*

VISUAL ALARM OUTPUT *(12V-30mA)*
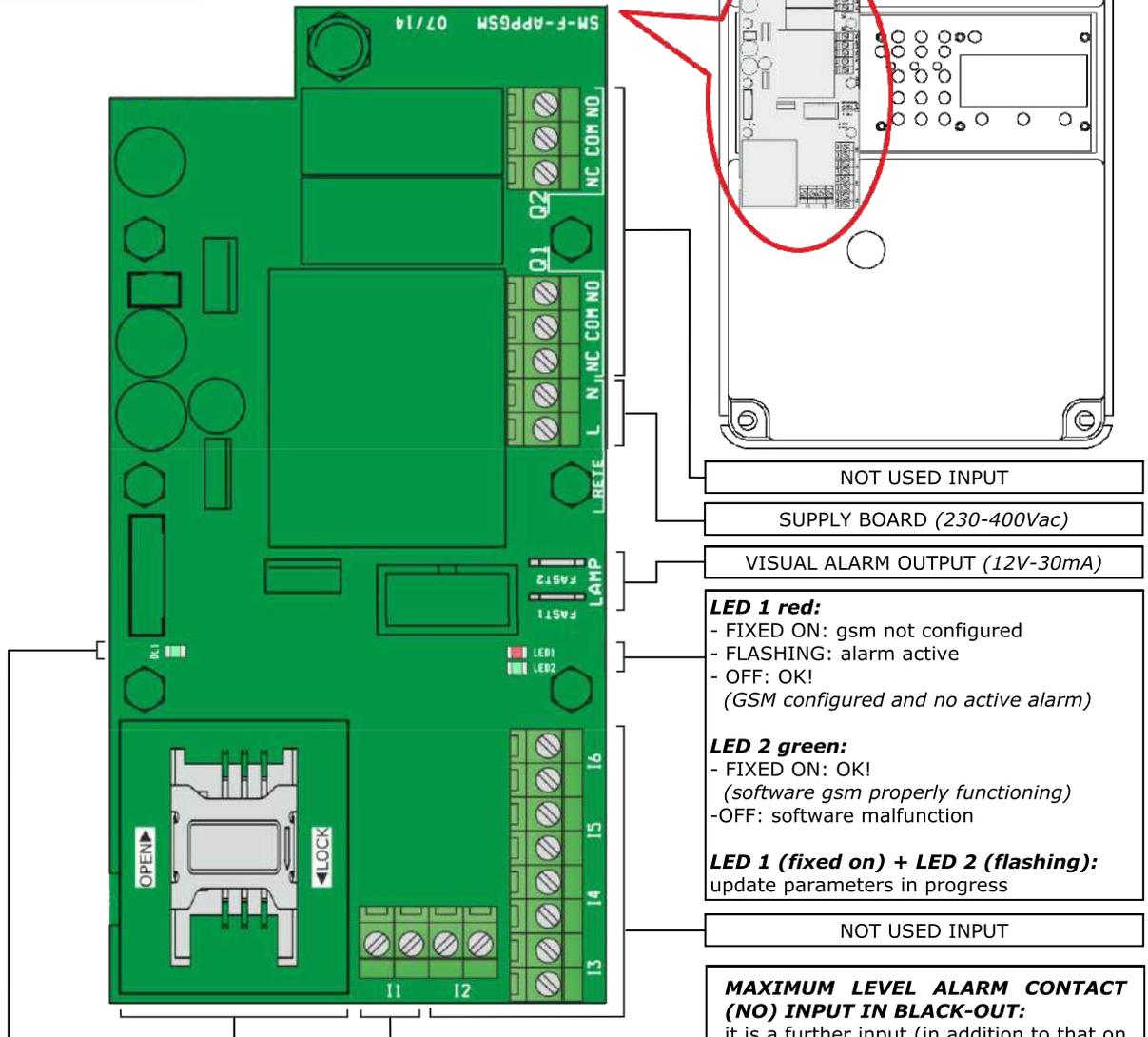
LED 1 red:
- FIXED ON: gsm not configured
- FLASHING: alarm active
- OFF: OK!
  (GSM configured and no active alarm)

LED 2 green:
- FIXED ON: OK!
  (software gsm properly functioning)
-OFF: software malfunction

LED 1 (fixed on) + LED 2 (flashing):
update parameters in progress

NOT USED INPUT

MAXIMUM LEVEL ALARM CONTACT (NO) INPUT IN BLACK-OUT:
it is a further input (in addition to that on the main board), usually connected to a float for signaling, by means of sending of SMS, the alarm of the highest level active only in case of black-out.
When the power supply is on the input turns off. It is not necessary any setting, it is activated automatically when you enable the GSM card.

Before inserting the SIM card, proceed as follows:
- **DISABLE THE PIN CODE** using a mobile phone,
- **DISABLE THE ANSWERING MACHINE.**
To insert the SIM card in the device is required:
- turn off the control panel and open the cover with caution
- unlock the door of the GSM module pushing it up and lift it up
- insert the SIM card in the door with its chip facing the contacts and its diagonal corner in the lower-right position;
- lower the door and push it gently downwards
- close the cover and turn on the control panel.
The sim card is always to be inserted and/or removed with the system TURNED OFF.
The device works with either prepaid or subscription SIM cards as well as data SIM cards **that operate on 2G**.

DL 1 green:
- FIXED ON (4-5 sec.): power-up routine in progress
- FLASHING FAST (1 sec.): GSM network search
- FLASHING SLOW (3 sec.): GSM network attached
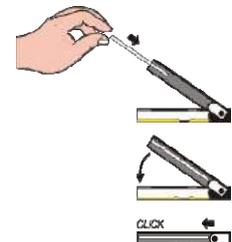
17. ELECTRIC CONNECTIONS (continued)

Connection of the power supply and single-phase pump with internal capacitor (embedded)
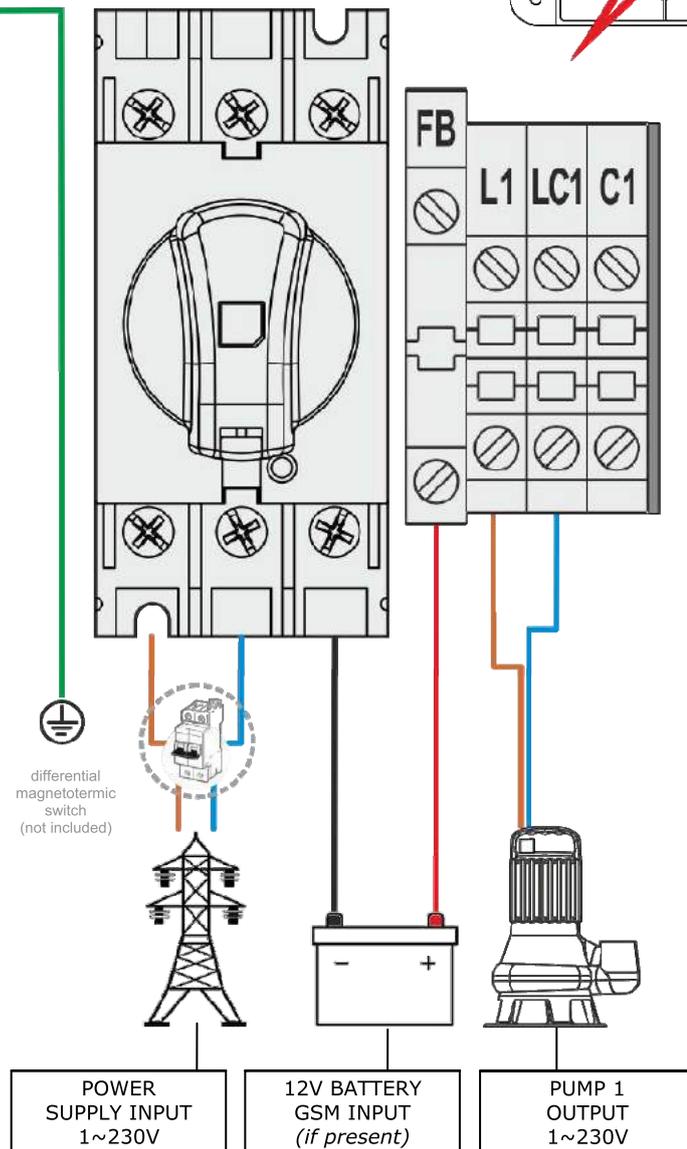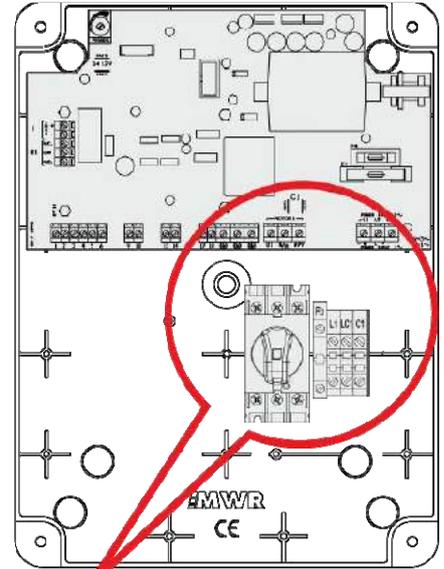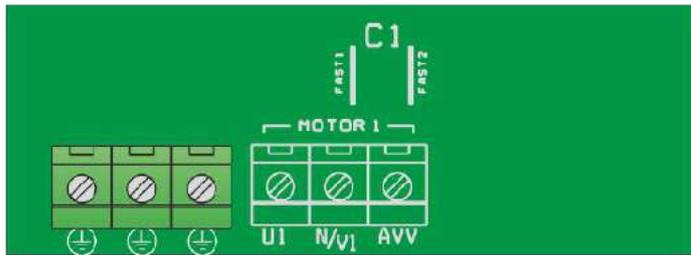
| POWER SUPPLY INPUT 1~230V | 12V BATTERY GSM INPUT *(if present)* | PUMP 1 OUTPUT 1~230V |

differential magnetotermic switch (not included)

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Global Water

17. ELECTRIC CONNECTIONS (continued)

Connection of the power supply and single-phase pump with external capacitor

C1: STARTING CAP. PUMP 1

1~

differential
magnetotermic
switch
(not included)

| POWER SUPPLY INPUT 1~230V | 12V BATTERY GSM INPUT *(if present)* | PUMP 1 OUTPUT 1~230V |
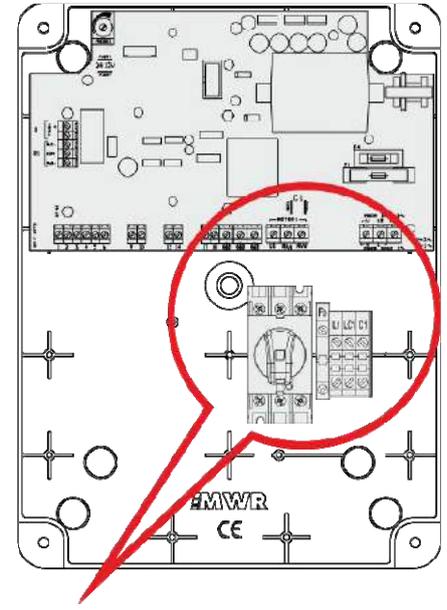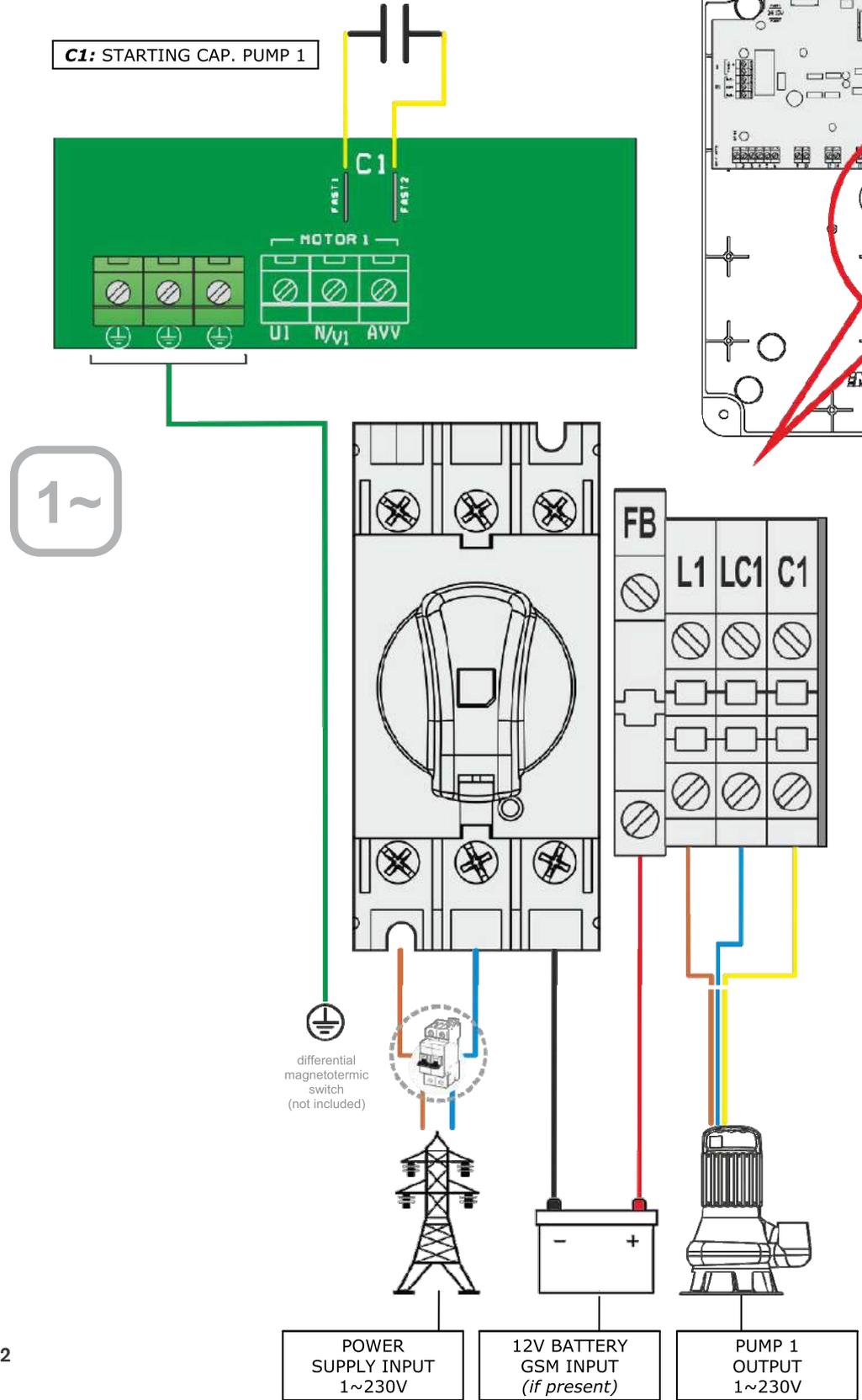
17. ELECTRIC CONNECTIONS (continued)

Connection of the power supply and three-phase pump

3~

17 18

differential
magnetotermic
switch
(not included)

FB
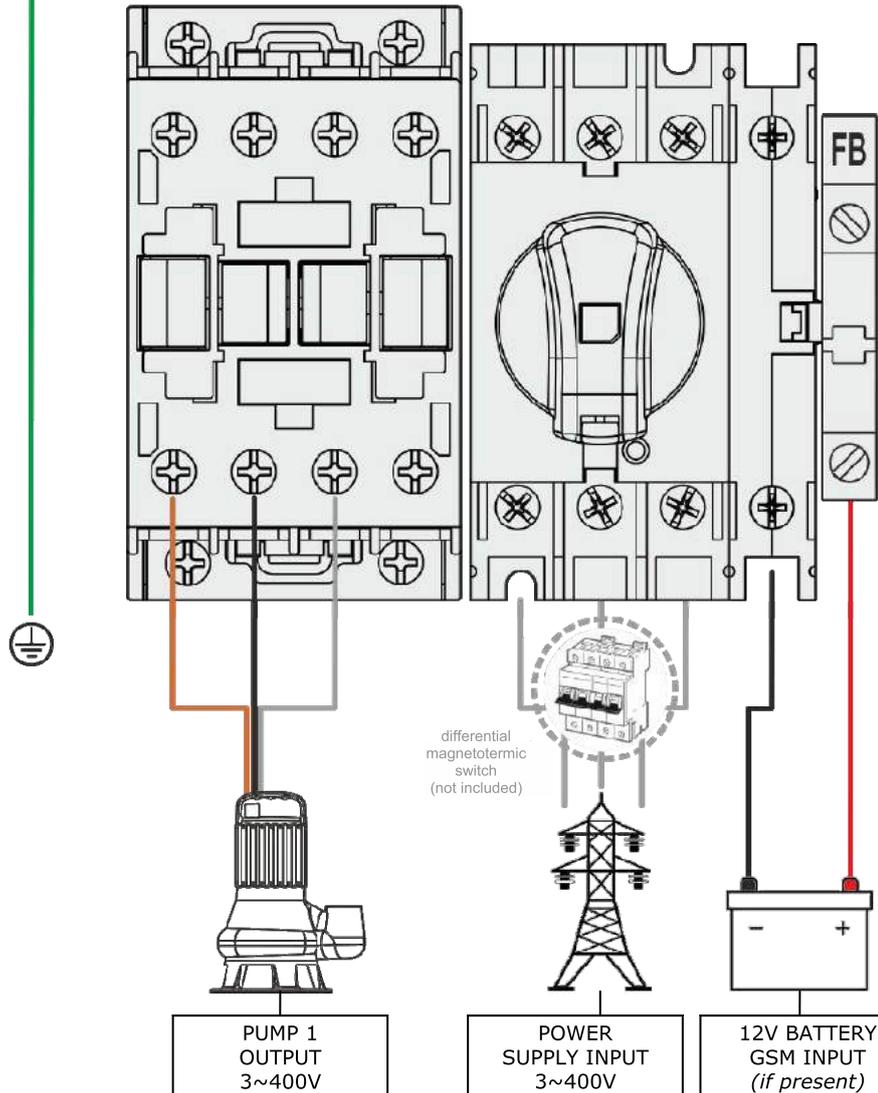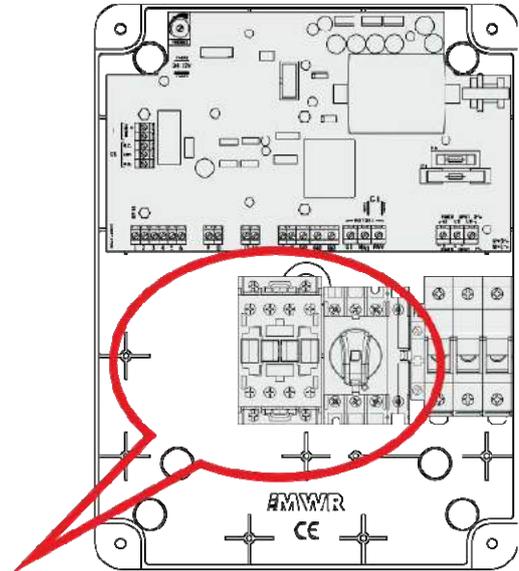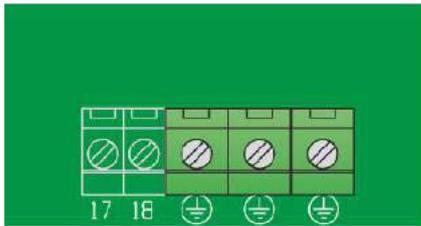
| PUMP 1 OUTPUT 3~400V | POWER SUPPLY INPUT 3~400V | 12V BATTERY GSM INPUT (if present) |

18. APPLICATION EXAMPLES

DARK [empty]
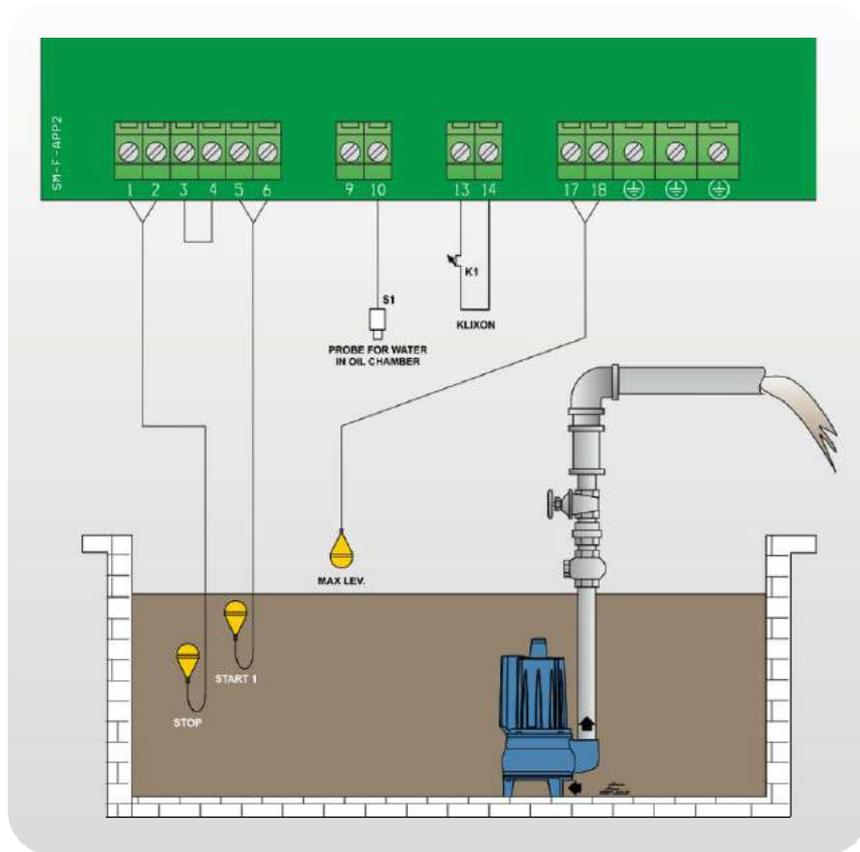
DARK [fill]
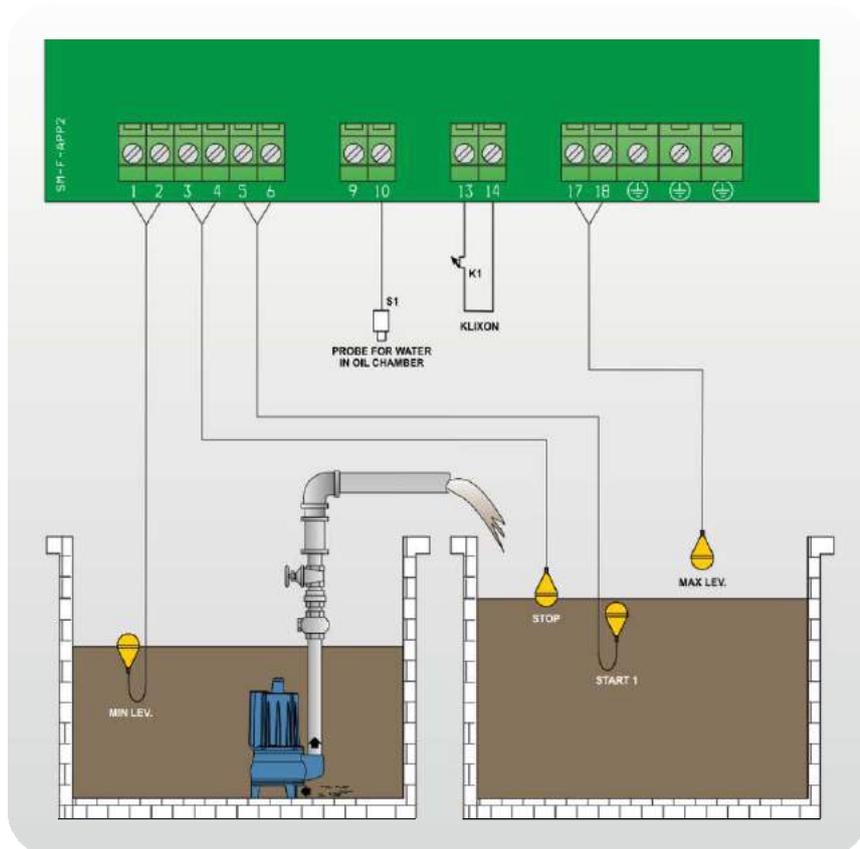
18. APPLICATION EXAMPLES (continued)
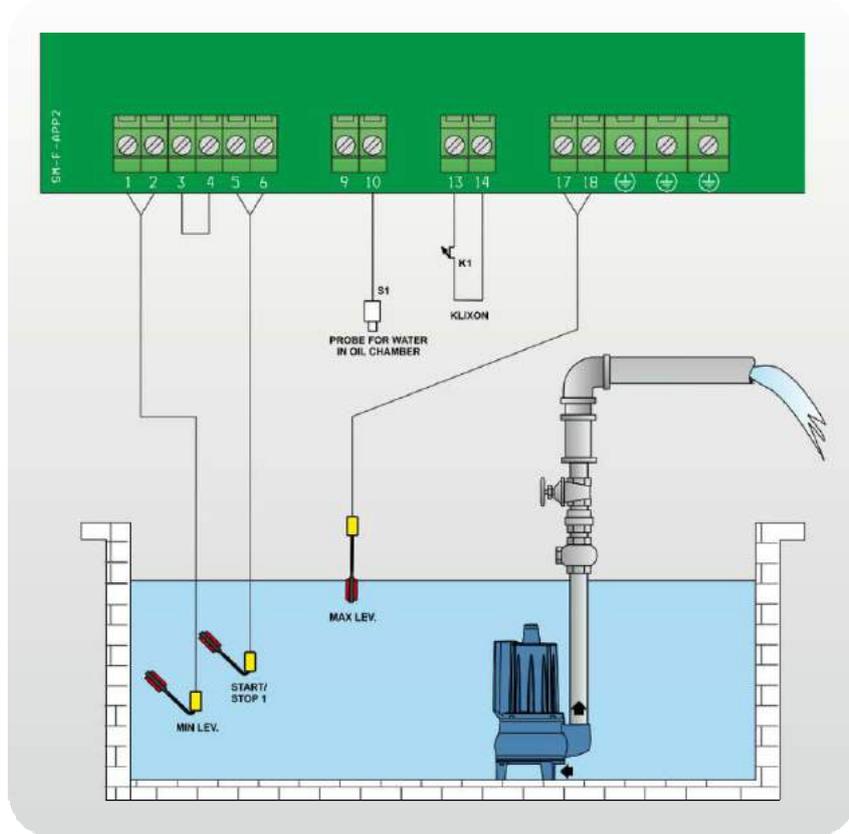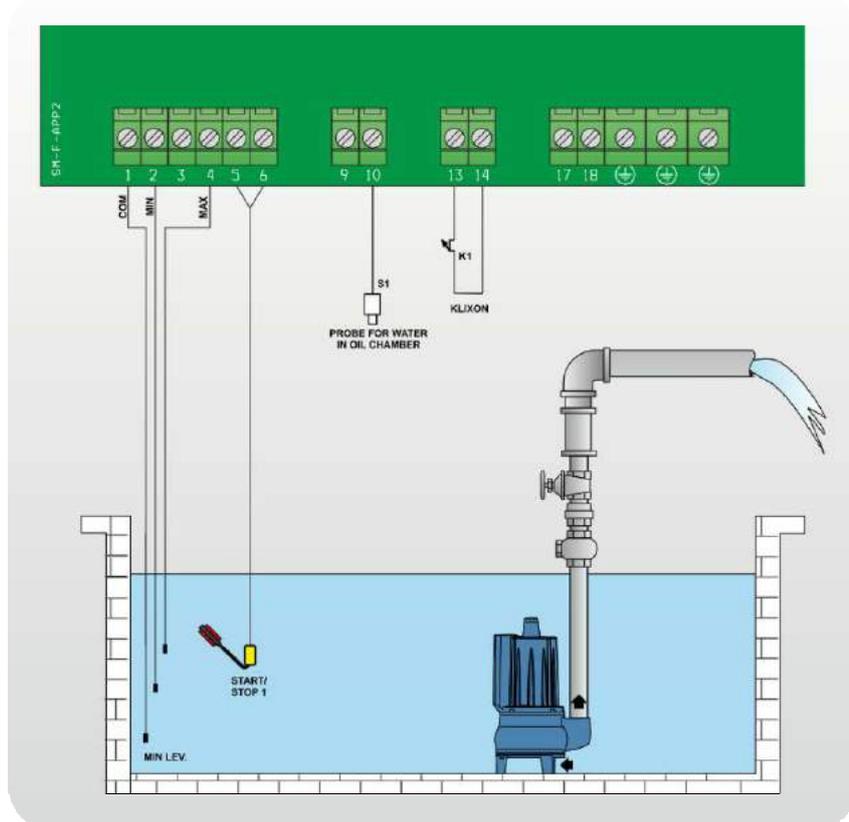
CLEAN [empty]

CLEAN [empty]

18. APPLICATION EXAMPLES (continued)
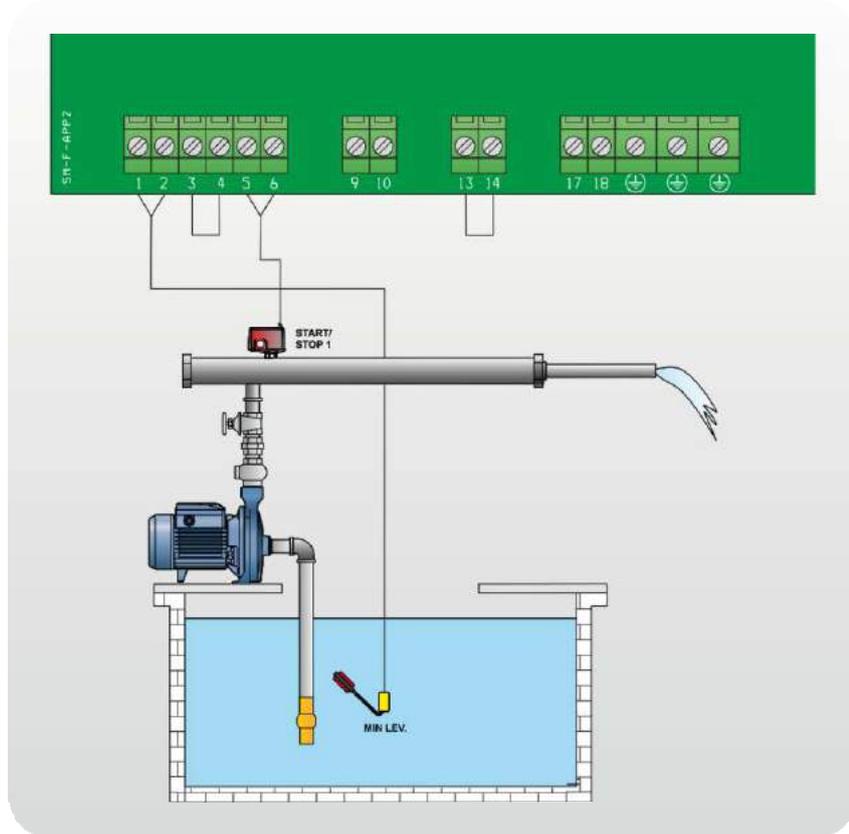
CLEAN [empty]

CLEAN [empty]
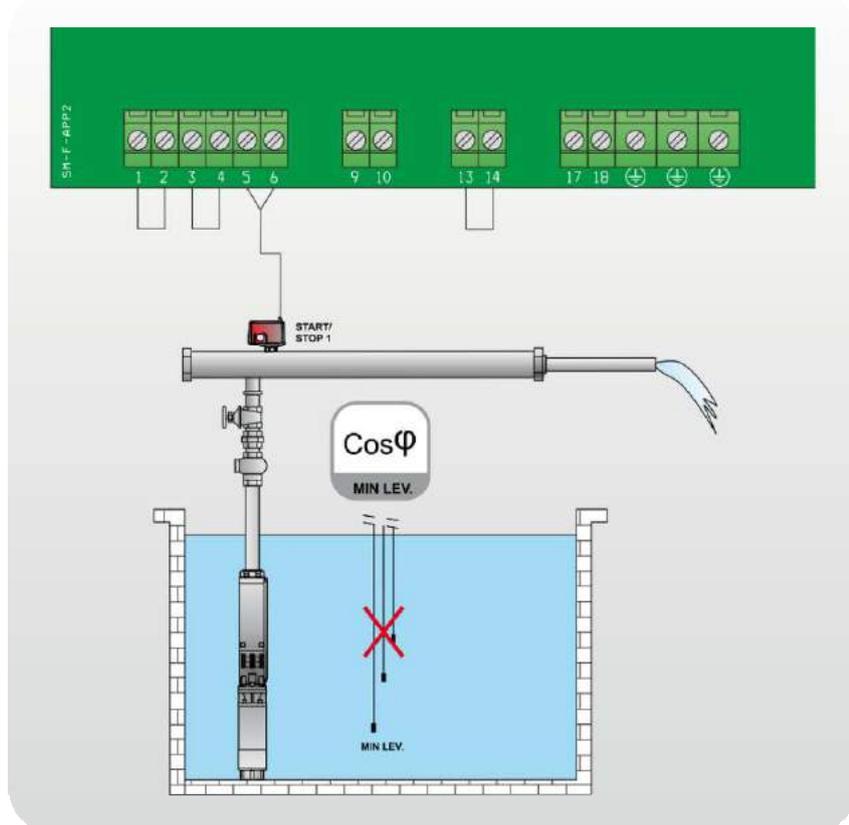
18. APPLICATION EXAMPLES (continued)

CLEAN [fill]
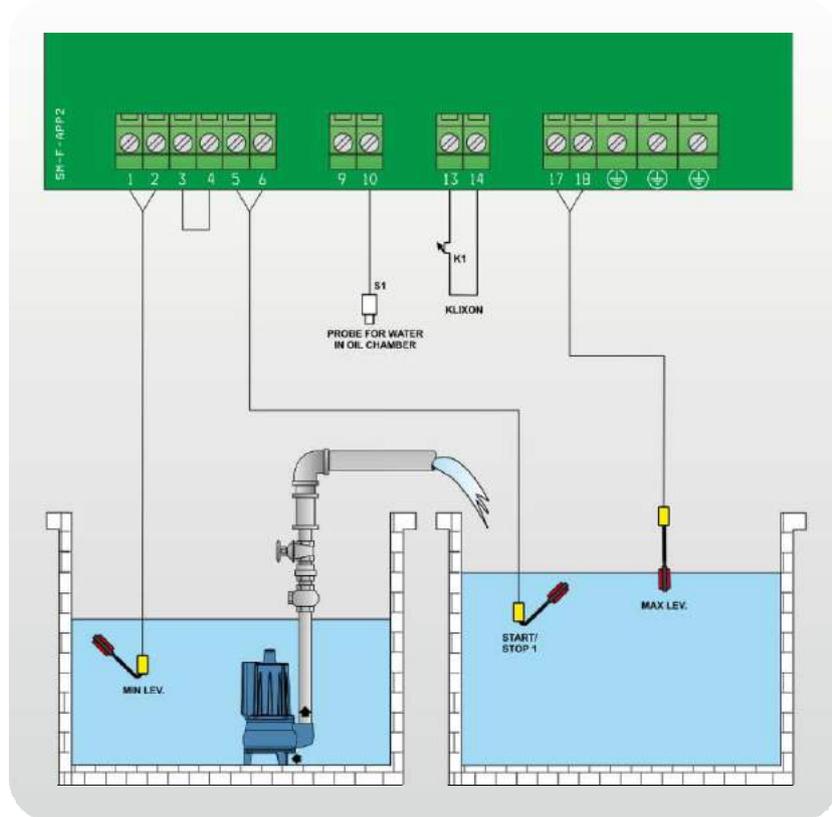
DIGIT [empty]
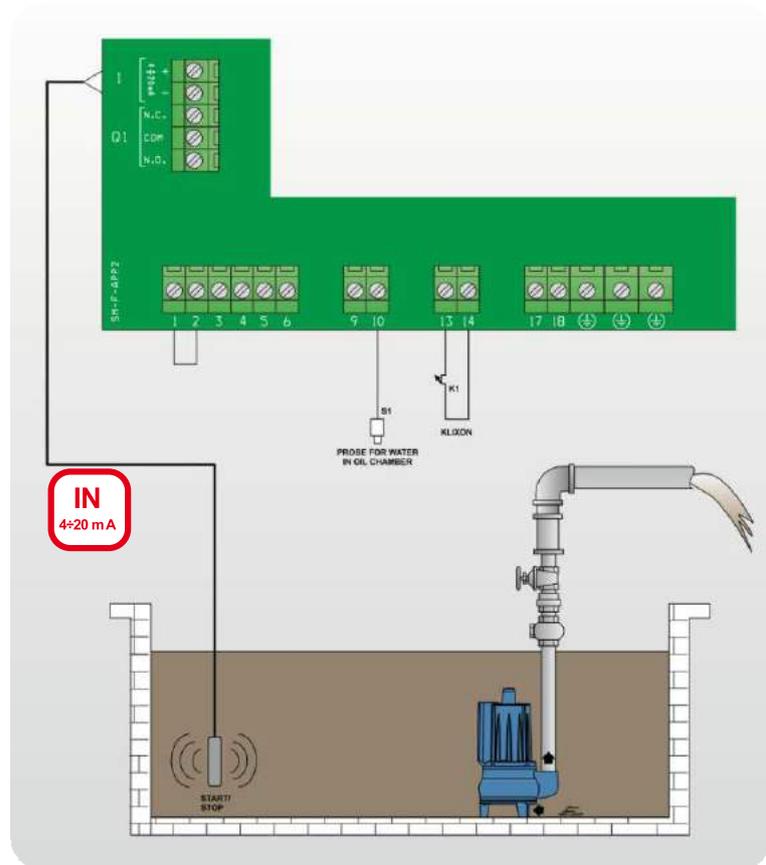
18. APPLICATION EXAMPLES (continued)

DIGIT [empty]
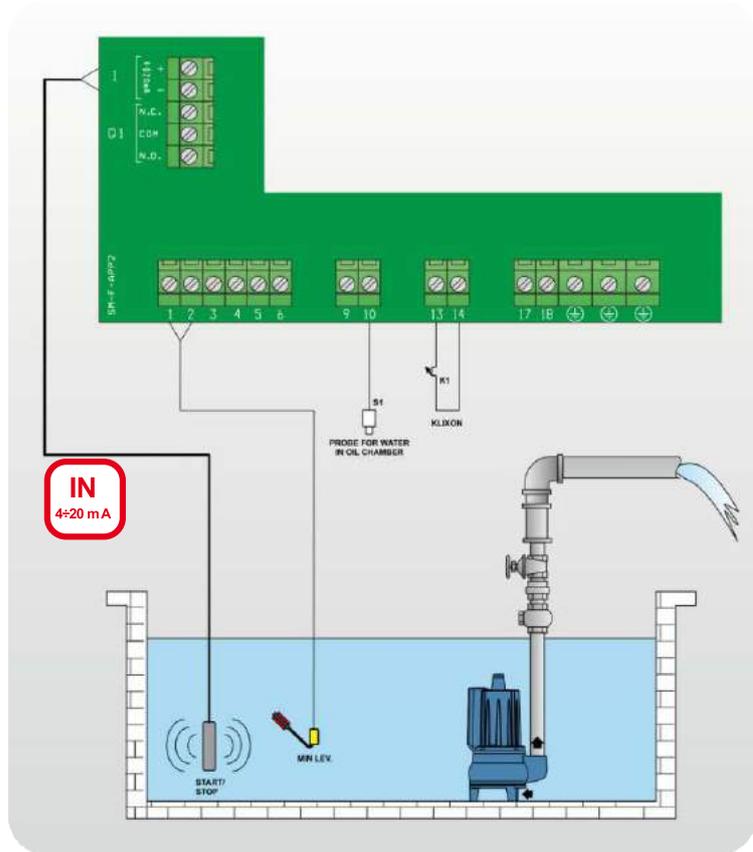
DIGIT [fill]
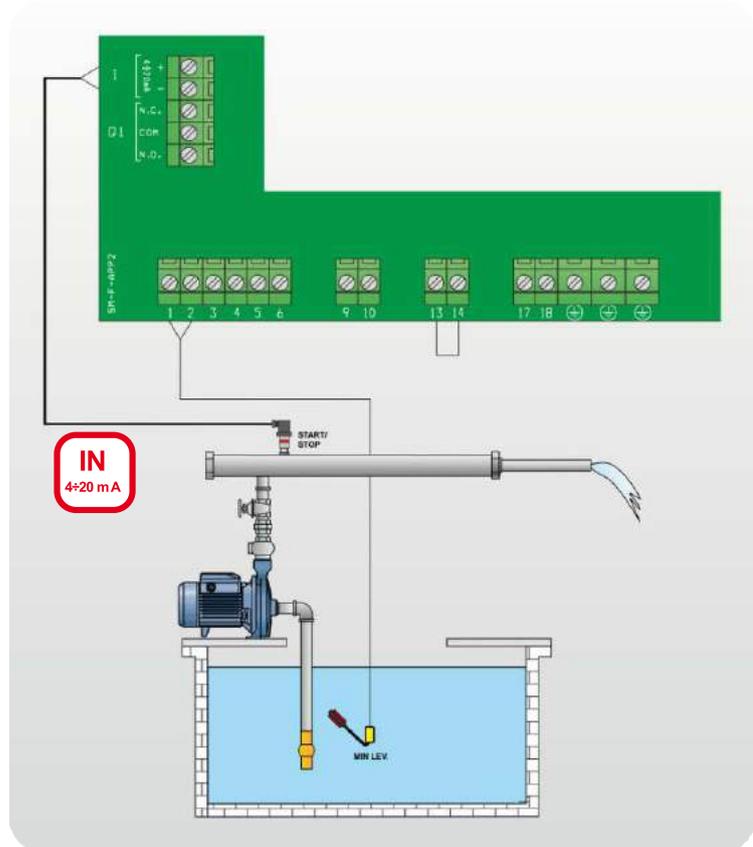
19. STOP THE PUMPS

Motor stop may occur in the following ways:
- In "manual" by releasing the MANUAL button (after the time set in parameter "Turn-Off MANUAL");

- In "automatic" mode when there is no consensus from the control inputs or by pressing "0" button;

- In "automatic" mode by pressing the "STOP" button from Remote-App (if active);

- Turning the main interlock switch to "0" position.

20. MAINTENANCE

XTREME[1] 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 with the safety regulations in force.

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

21. 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.

22. 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.

19. STOP THE PUMPS

Motor stop may occur in the following ways:
- In "manual" by releasing the MANUAL button (after the time set in parameter "Turn-Off MANUAL");

- In "automatic" mode when there is no consensus from the control inputs or by pressing "0" button;

- In "automatic" mode by pressing the "STOP" button from Remote-App (if active);

- Turning the main interlock switch to "0" position.

20. MAINTENANCE

XTREME² 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 with the safety regulations in force.

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

21. 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.

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Global Water

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S:\Global Water\SALES\Specification sheets\S40261