0. Contents
1. Safety
   1.1 Basic advice on safety and damage prevention
   1.2 Preliminary inspection
2. General
   2.1 Introduction
   2.2 Technical features
   2.3 Main components
3. Installation
   3.1 Choice of intake and outlet pipes
   3.2 Choice of ventilation pipes
   3.3 Choice of emergency drainage system
   3.4 Choice of check valve
   3.5 Choice of stape valve
   3.6 Control cabinet
   3.7 Level switch
   3.8 Choice of auxiliary drainage pump
   3.9 Location
   3.10 Hydraulic connection
4. Start up
   4.1 Connection box version with electric plug
   4.2 Wall-mounted control cabinet version
   4.3 Top control cabinet version
5. Repairs and maintenance
   5.1 Pump replacement
   5.2 Maintenance and cleaning
6. Possible problems, causes and solutions
7. Transport and storage
8. Elimination
9. Dimensions and weight
10. Declaration of conformity

1. Safety
Safety warning for people and objects.

The following symbols alongside a paragraph indicate the possibility of danger as a consequence of not complying with the corresponding specifications.

⚠️ DANGER
Risk of electrocution in the event of non-compliance with this specification.

⚠️ DANGER
Risk of injury in the event of non-compliance with this specification.

❗️ CAUTION
Risk of damage to the equipment or the installation in the event of non-compliance with this specification.

1.1. Basic advice on safety and damage prevention

⚠️ CAUTION please read carefully
Read the instructions carefully before installing or using the DRAINBOX FL.

⚠️ DANGER sharp object
Take all necessary precautions when handling the pump, as it contains extremely sharp parts.

⚠️ DANGER electrocution risk
Take great care when handling the DRAINBOX FL drainage station, as it is connected to the mains and contains water (a good electricity conductor).

⚠️ DO NOT manipulate or repair
Manipulations or repairs must only be performed by the official technical service. The user must only perform the manipulations indicated in this manual.
The manufacturer is not responsible for any other manipulations that the user may perform.

**CAUTION periods of non-use**
When periods of non-use are foreseen, disconnect the current plug from the base.

**DANGER supply cable**
Position the supply cable so that it cannot be stepped on, perforated or damaged by any object located.

**CAUTION cleaning**
Always clean with a damp cloth and a neutral soap solution. Do not use products that contain solvents or acids.

**CAUTION heat**
Install the equipment away from all sources of heat, such as radiators or other appliances generating heat.

1.2 PRELIMINARY INSPECTION

On delivery of the goods, check that the packaging is not damaged. If it is damaged, remove the product from the packaging and carry out a visual check that it has not been damaged during transport. If the product is damaged, inform our distributor within 8 days of delivery.

The product is supplied on a wooden pallet. During transport and storage, protect the product from humidity, heat sources and possible mechanical damage (impact, falls, etc...)

Lift and handle the product with care, using the appropriate lifting devices.

2. General

2.1 INTRODUCTION

The instructions supplied are intended to ensure correct installation and excellent performance of our DRAINBOX FL drainage station.

Make reference to the specific manuals for information regarding electric pumps.

The instructions and specifications below refer to the standard version. Refer to the contractual sales documentation for variations and features of the special versions.

If it is necessary to request technical information or replacement parts from our customer service department, please give the exact name of the model, together with the serial number.

For instructions, situations and events which are not covered in this manual or in the sales documentation contact, our nearest customer service point.

The range comprises devices for collecting and pumping wastewater from 1 to 3 accommodation units (grey water) to resolve the problem of getting wastewater into the sewers if gravity feed is not possible. This occurs when the wastewater collection point is located at a lower level than the public or private drainage system pipe to which the connexion is to be made.

All models have an internal pump, with or without macerator, automated with a level sensor or float. As an option, an internal non-return valve and flap valve can be installed. Height and capacity can also be increased by installing an extension.

The device allows multiple wastewater intake connections (Ø110) depending on the installation, together with the possibility of vertical or horizontal delivery outlet.

Delivery is via PVC pipe (Ø63, Ø50, Ø40) depending on the model.

All models have a ventilation pipe connector Ø63.

As an option, an audible alarm can be installed in case of a breakdown in the discharge system.

Compliance with specific legislation EN 12050-2.

2.2 TECHNICAL FEATURES

Make reference to the specific manuals for information regarding electric pumps.

The product must not be used in the presence of dust, acids, corrosive and/or inflammable gases.

The electric pump must not be used to pump dangerous or inflammable liquids.

The equipment has IP 55 protection. Nevertheless we recommend installing the electrical cabinets in a dry, protected place.
### Curve Pumps

<table>
<thead>
<tr>
<th>Curve</th>
<th>Pump Model</th>
<th>Single-ph.</th>
<th>Three-ph.</th>
<th>1~230V</th>
<th>3~400V</th>
<th>Impeller</th>
<th>Free Passage</th>
<th>Connection</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>VIGILEX 600</td>
<td>0.8</td>
<td>-</td>
<td>3.4</td>
<td>-</td>
<td>VORTEX</td>
<td>24 mm</td>
<td>G 2&quot;</td>
</tr>
<tr>
<td>2</td>
<td>VIGICOR 150</td>
<td>1.2</td>
<td>-</td>
<td>3.4</td>
<td>-</td>
<td>MACERATOR</td>
<td>-</td>
<td>G 2&quot;</td>
</tr>
<tr>
<td>3</td>
<td>DRAINEX 201</td>
<td>1.4, 1.4</td>
<td>3.4</td>
<td>2.6</td>
<td>VORTEX</td>
<td>45 mm</td>
<td>G 2¾&quot;</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>DRAINEX 301</td>
<td>1.5, 1.5</td>
<td>3.4</td>
<td>2.7</td>
<td>VORTEX</td>
<td>60 mm</td>
<td>G 2¾&quot;</td>
<td></td>
</tr>
</tbody>
</table>

### Head Losses in Metres

<table>
<thead>
<tr>
<th>Flow in m³/h</th>
<th>1</th>
<th>1.5</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>12</th>
<th>15</th>
<th>20</th>
<th>25</th>
</tr>
</thead>
<tbody>
<tr>
<td>1&quot; ¼</td>
<td>0.5</td>
<td>1.0</td>
<td>2.0</td>
<td>4.5</td>
<td>7.6</td>
<td>13.0</td>
<td>17.0</td>
<td>25.0</td>
<td>33.0</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>1¼&quot;</td>
<td>0.2</td>
<td>0.5</td>
<td>0.9</td>
<td>2.2</td>
<td>3.5</td>
<td>6.0</td>
<td>8.0</td>
<td>12.0</td>
<td>14.0</td>
<td>19.0</td>
<td>23.0</td>
<td>33.0</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>2&quot;</td>
<td>-</td>
<td>0.1</td>
<td>0.3</td>
<td>0.6</td>
<td>1.0</td>
<td>1.8</td>
<td>2.5</td>
<td>3.5</td>
<td>4.5</td>
<td>5.7</td>
<td>7.0</td>
<td>10.0</td>
<td>15.0</td>
<td>26.0</td>
<td>40.0</td>
</tr>
</tbody>
</table>

For plastic pipes, multiply values by 0.8.
For elbows and valves, allow a hypothetical additional length of 2 metres for each part.
For check valves and filters, allow a hypothetical additional length of 10 metres.

### Correspondance Table - Nominal Diameters and Threaded Joints

<table>
<thead>
<tr>
<th>DN mm</th>
<th>8</th>
<th>10</th>
<th>15</th>
<th>20</th>
<th>25</th>
<th>32</th>
<th>40</th>
<th>50</th>
<th>65</th>
<th>80</th>
<th>100</th>
</tr>
</thead>
<tbody>
<tr>
<td>Threading</td>
<td>⅜&quot;</td>
<td>⅝&quot;</td>
<td>⅝&quot;</td>
<td>⅞&quot;</td>
<td>1&quot;</td>
<td>⅞&quot;</td>
<td>1½&quot;</td>
<td>2&quot;</td>
<td>2½&quot;</td>
<td>3&quot;</td>
<td>4&quot;</td>
</tr>
<tr>
<td>mm</td>
<td>8/13</td>
<td>12/17</td>
<td>15/21</td>
<td>20/27</td>
<td>26/34</td>
<td>33/42</td>
<td>40/49</td>
<td>50/60</td>
<td>66/76</td>
<td>80/90</td>
<td>102/114</td>
</tr>
<tr>
<td>PVC/PE</td>
<td>-</td>
<td>-</td>
<td>20</td>
<td>25</td>
<td>32</td>
<td>40</td>
<td>50</td>
<td>63</td>
<td>75</td>
<td>90</td>
<td>110</td>
</tr>
</tbody>
</table>
2.3 MAIN COMPONENTS

PACKAGING KIT

ACCESSORIES

CONTROL CABINET OPTIONS (depending on model)

<table>
<thead>
<tr>
<th>Nº</th>
<th>NAME</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Tank cover</td>
</tr>
<tr>
<td>2</td>
<td>Tank</td>
</tr>
<tr>
<td>3</td>
<td>Manual pump cap</td>
</tr>
<tr>
<td>4</td>
<td>Electric pump</td>
</tr>
<tr>
<td>5</td>
<td>PVC connecting pipe</td>
</tr>
<tr>
<td>6</td>
<td>Rising Kit</td>
</tr>
<tr>
<td>7</td>
<td>Float switches</td>
</tr>
<tr>
<td>8</td>
<td>Instruction manual</td>
</tr>
<tr>
<td>9</td>
<td>Seal Ø 63</td>
</tr>
<tr>
<td>10</td>
<td>Seal Ø 110</td>
</tr>
<tr>
<td>11</td>
<td>Anchoring devices</td>
</tr>
<tr>
<td>12</td>
<td>Grommet</td>
</tr>
<tr>
<td>13</td>
<td>Elbow Ø110 male-female</td>
</tr>
<tr>
<td>14</td>
<td>Extension</td>
</tr>
<tr>
<td>15</td>
<td>Stop valve</td>
</tr>
<tr>
<td>16</td>
<td>Check valve</td>
</tr>
<tr>
<td>17</td>
<td>Connection box with electric plug</td>
</tr>
<tr>
<td>18</td>
<td>Wall-mounted control cabinet</td>
</tr>
<tr>
<td>19</td>
<td>Top control cabinet</td>
</tr>
</tbody>
</table>
3. Installation

Installation operation must be carried out solely by expert qualified personnel. Use adequate equipment and protection. Comply with accident prevention standards. Lift and handle the product with care, using the appropriate lifting devices.

Before installation, read these instructions and the electric pump instructions.

If the equipment shows obvious signs of damage, do not install it and contact the Assistance Department.

Always refer to applicable regulations, laws and local and/or national rules concerning selection of the place of installation and hydraulic and electrical connections.

3.1 CHOICE OF INTAKE AND OUTLET PIPES

The DRAINBOX FL range of pumping stations offers various pipe intake and outlet options (see point 3.10.1). Depending on the type of installation and the local standards applicable, it may be necessary to include a siphon on the connection pipe to public/private drainage systems.

Always comply with the local and/or national regulations, laws and standards in force.

3.2 CHOICE OF VENTILATION PIPES

Do not forget to include a drain pipe in the installation, to avoid the formation of inflammable, explosive and toxic mixtures.

Different national standards may require different ratios between the diameters of the outlet pipe and the drain pipe.

Check that the outlet from this pipe is outside (for example on the roof ridge, if the station is installed in a building) and that the gases discharged cannot penetrate other locations such as buildings, dwellings, etc...

Always comply with the local and/or national regulations, laws and standards in force. For more information, refer to section 3.10.5.

3.3 CHOICE OF EMERGENCY DRAINAGE SYSTEM

The pumping station container is provided with an 2" orifice for emergency emptying, on the lower front section. We recommend connecting a manual diaphragm pump to the orifice, with discharge pipes independent of the electric pump discharge pipes.

3.4 CHOICE OF CHECK VALVE

Fit a check valve on the pipe connected to the public/private drainage system, to avoid liquid flowback. If using a ball valve, check that it is the heavy submersible ball type, rather than a ball float: their conditions of installation and use are very different.

Always comply with the local and/or national regulations, laws and standards in force.

3.5 CHOICE OF STOP VALVE

Install a stop valve on the intake and outlet pipe (connection to public/private drainage system), to allow maintenance operations to be performed without having to drain the entire installation. Ball valves or check-valves may be used.

Always comply with the local and/or national regulations, laws and standards in force.
3.6 CONTROL CABINET

Check that the electrical data for the control cabinet corresponds to that for the electric pump. If they do not correspond correctly, this may cause breakdowns and damage the protection of the electric motor.

⚠️ Electrical connections must be performed by a qualified installer, in compliance with the standards in force and local legislation.

⚠️ Check that the mains voltage and frequency match the nominal data shown on the rating plate. The electrical installation must have a multiple separation system with 3 mm conact opening. System protection must include a differential circuit breaker (In = 30mA) and a short-circuit protection device. The electrical connection is made by plugging the pump directly into a domestic socket; in accordance with standard IEC-60364 (electrical installations in buildings) or the legislation in force in the destination country.

⚠️ Before any maintenance or repair operation, disconnect the equipment from the mains.

⚠️ The installation must be earthed in compliance with the applicable standards. Above all, connect the external protective conductor to the earth terminal, taking care to ensure that it is longer than the phase conductors. When choosing conductors (section, casing material, etc...), actual operational conditions must be taken into consideration. Protect electrical conductors against excessive temperatures and any vibrations or impact.

(Units are supplied with their control boxes fitted).

<table>
<thead>
<tr>
<th>Single phase</th>
<th>Three phase</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1" alt="Single phase image" /></td>
<td><img src="image2" alt="Three phase image" /></td>
</tr>
<tr>
<td>3.6.1/4.1</td>
<td>3.6.2 / 4.2</td>
</tr>
<tr>
<td><img src="image3" alt="Single phase image" /></td>
<td><img src="image4" alt="Three phase image" /></td>
</tr>
<tr>
<td>3.6.3.2 / 4.3</td>
<td>3.6.3.3 / 4.3</td>
</tr>
</tbody>
</table>

* The section number is shown under each box.*
3.6.1. Station with single cabinet

Check that the plug corresponds to the installed power outlet. Otherwise, use an adaptor on the standard plug for the country concerned.

All connections are made in the works, simply plug into a power outlet. This cabinet includes an electric plug (1) and has a light and sound alarm signal (2) and a selector used to choose the operating mode, Manual or Automatic.

The wiring diagram below shows the electrical cabinet connections.

In this version, the pumps are single phase and do not have a level sensor, since the tank already has two level sensors.

The tank contains the level sensors and the pump on/off control circuit. The diagram below shows all cable connection.

3.6.2. Station with wall-mounted cabinet

All connections are made in the works, simply plug in the power supply cable (3). This version has three-phase pumps without level sensors. The tank already has two level sensors, fitted inside the tank cover. The pump is controlled from the control cabinet outside the tank.

This box includes a light and sound alarm (2), a manual/automatic/stop mode selector (1) and a thermal protection relay.
3.6.3. Station avec coffret top

Tous les branchements sont réalisés d'origine, il suffit de brancher le câble d'alimentation. Il comprend toutes les protections pour protéger les pompes installées, ainsi qu'un écran LCD (9) pour faciliter la communication avec l'utilisateur. Le fonctionnement est très simple, en utilisant uniquement quatre touches 5, 6, 7, 8) pour se déplacer dans les différents menus. Il comprend également des led qui indiquent le fonctionnement de la pompe (1, 2), l’actionnement de l’alarme (3) ou l’avertissement de révision (4).

3.6.3.1 Montage coffret

A) Ouvrir le couvercle.

B) Fixer le coffret au mur à l’aide de 3 vis.

In the control box, connect the pump cable and the level float switches. See details of connection.

Installation inside the tank
(Installation for wall cabinet and top cabinet)

Fix the cabinet to the wall using 4 screws.
3.6.3. Station with top cabinet
All connections are made in the works, simply plug in the power supply cable. It includes full protection for the installed pumps, and a LCD screen (9) for easier communication with the user. Operation is very simple, using only four keys (5, 6, 7, 8) to move around the different menus. It also has LEDs indicating pump operation (1, 2), alarm activation (3) or servicing (4).

3.6.3.1 Fitting the cabinet
A) Open the cover.  
B) Fix the cabinet to the wall using 3 screws.
3.6.3.2 Single phase installation

3.6.3.3 Three-phase installation

3.6.3.4 Three-phase installation

3.7 LEVEL SWITCH

The station without electrical cabinet includes a levelsystem incorporated into the pump, using a level float.

All other stations are fitted as standard with two pressure type level switches, one for starting and stopping the pumps and the other for the alarm signal.

The pressure type level switches operate by checking the pressure exercised by the water level. The most important point to note is that there is no mechanical part in contact with the water, which is why they are highly suitable for working with foul water or raw sewage.

* To install cables in this connector, pull the connector to remove it from its housing, this will make connection easier.
3.6.3.2 Single phase installation

3.6.3.3 Three-phase installation

3.6.3.4 Three-phase installation

3.7 LEVEL SWITCH

The station without electrical cabinet includes a levelsystem incorporated into the pump, using a level float.

All other stations are fitted as standard with two pressure type level switches, one for starting and stopping the pumps and the other for the alarm signal.

The pressure type level switches operate by checking the pressure exercised by the water level. The most important point to note is that there is no mechanical part in contact with the water, which is why they are highly suitable for working with foul water or raw sewage.

* To install cables in this connector, pull the connector to remove it from its housing, this will make connection easier.
3.8 CHOICE OF AUXILIARY DRAINAGE PUMP

Depending on the type of installation and local standards and/or customs, it may be necessary to allow for the presence of a small electric drainage pump, positioned at a slightly lower level than the pumping station, to prevent any flooding in the event of infiltrations or operating problems on the pumps in the station. It may also be necessary to provide an emergency supply for the electric pump.

3.9 LOCATION

3.9.1 Surface installation

⚠️ Do not use the power supply cable to lift and transport the pumping station or the electric pump.

⚠️ Install the pumping station on a horizontal floor, strong enough to support the weight of the station during operation.

Provide sufficient space for installation and maintenance around and over the station.

⚠️ Position any condenser-box and/or electrical cabinet in a location protected from bad weather, complying with the limits indicated in the technical data.

If the drainage station is installed inside a building, sufficient ventilation must be provided to prevent the formation of toxic or inflammable mixtures. *(Consult point 3.2)*

3.9.2 Fixing

A) Mark the position of the holes.

B) Remove the station and drill a hole in each mark, of sufficient depth for the fixing.

C) Insert the Parabolt studs into the holes using a hammer.
D) Tighten the nut as far as possible to anchor the stud in the floor. After tightening it, remove the nut.

E) Install the station.

F) Tighten the nuts.

Maximum tightening torque 10 Nm

3.9.3 Double surface installation

Double stations are linked back to back. The customer has the option of linking the two stations alongside one another, using 2 elbows supplied as an option.

3.9.4 Buried installation

⚠️ Do not use the power supply cable to lift and transport the pumping station or the electric pump.

⚠️ The pumping station must not be located directly on the ground. The chosen terrain must not have any groundwater or be subject to flooding. There must be an appropriate horizontal base to support the weight of the station during operation. Depending on the characteristics of the terrain, it may be necessary to construct brick walls or install pre-cast or concrete components.
Avoid the passage of motor vehicles and/or pedestrians over the cover. The container is not designed to support weight.

Close the pit with a cover (closure) or other method allowing subsequent easy access for maintenance. If the station is installed outside, provide appropriate systems to indicate its presence, in order to avoid damage by lack of attention. Provide sufficient space for installation and maintenance around and over the pumping station.

Position any condenser-box and/or electrical cabinet in a location protected from bad weather, complying with the limits specified in the technical data.

Once hydraulic and electrical connection is complete, we recommend putting clean sand around the container to reduce any movement caused by the installation and/or the surrounding terrain.

3.9.5 Transport and installation
3.9.6 Double buried installation

3.9.7 Installation with extension
To increase tank capacity or increase the flow level difference in the tank, an extension can be installed.

3.9.8 Use of extension as inspection hatch for valves
The extension can be used as an inspection hatch for valves, as shown in the drawing.

To transport or install the station with the extension, the hooks must be fastened inside the tank.

3.10 HYDRAULIC CONNECTION
The hydraulic connections must be fitted by a qualified installer in compliance with the applicable standards.
3.10.1 Preparation of clearance holes

DRAINBOX FL pumping stations offer various pipe intake and outlet options. The station is supplied with the PVC delivery pipe already installed vertically or horizontally, depending on the model, and with outlets Ø 40, Ø 50 or Ø 63, depending on the pump model. The DRAINBOX FL delivery connection to the installation must be glued. Depending on the model, it may include a flap valve and non-return valve inside. The various possible intakes are closed, and it is up to the installer to decide what intakes are the most suitable, depending on the requirements and the type of installation concerned.

The tank has various guidance markers for drilling, as shown on the drawing, with two possible measurements - Ø 110 and Ø 63.

To drill the holes, use a Ø 120 or Ø 73 bit. 1 seal is provided for each diameter, to ensure leak tightness and straightforward connection.

3.10.2 Air outlet connection

A) Drill the hole using a Ø 73 bit.

*For easier fitting, chamfer the edge of the pipe.

3.10.3 Wastewater intake connection

A) Drill the hole using a Ø 120 bit.

*For easier fitting, grease the seal.

B) Put the seal in the hole.

C) Put the Ø 63 pipe into the seal.
B) Put the seal in the hole.

*C For easier fitting, grease the seal.

C) Put the Ø 110 pipe into the seal.

* For easier fitting, chamfer the edge of the pipe.

3.10.4 Manual pump installation

For installation of the manual pump, use the bottom 2" threaded hole.
3.10.5 Pipe fitting and connection

Connect the outlet pipe to the public/private drainage system connection pipe. We recommend installing check valves. Depending on the type of installation and the local standards applicable, it may be necessary to include a siphon in the connection pipe to public/private drainage systems. Fix all pipes in such a way that the pumping station is not supporting their weight. If necessary, use appropriate methods to prevent transmission of vibrations and protect the pipes from freezing. Seal the pipe passages through the sides of the container to prevent unpleasant smells being released. Always comply with the local and/or national regulations, laws and standards in force.

<table>
<thead>
<tr>
<th>Nº</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>DRAINBOX FL</td>
</tr>
<tr>
<td>2</td>
<td>Intake pipes with stop valve, seals or hoses, pipe supports.</td>
</tr>
<tr>
<td>3</td>
<td>Outlet pipes with stop valve, check valve, seals or hoses, pipe supports.</td>
</tr>
<tr>
<td>4</td>
<td>Siphon</td>
</tr>
<tr>
<td>5</td>
<td>Ventilation with seals or hoses, pipe supports.</td>
</tr>
<tr>
<td>6</td>
<td>Emergency drainage system with manual diaphragm pump, seals or hoses, pipe supports.</td>
</tr>
<tr>
<td>7</td>
<td>Auxiliary drainage pipes with stop valve, check valve, seals or hoses, pipe supports.</td>
</tr>
</tbody>
</table>
4. Start-up

⚠️ Check that all electrical and hydraulic connections are in place, together with the ventilation outlet.

⚠️ The single phase pumps are fitted with heat protection built into the motor inside the stator coil. Don't forget that the pump might start up unexpectedly when the motor coil cools down.

In automatic mode, the pump starts and stops automatically, depending on the water level in the tank.

4.1. CONNECTION BOX VERSION WITH ELECTRIC PLUG

This box includes an electric plug (1) and has a light and sound alarm signal (2) and a Manual or Automatic operating mode selector (3).

The alarm (2) is activated when the water level is up to the maximum high level of the tank.

In manual operation, the pump still runs. Monitor the water level to avoid the pump running dry, which could damage it.

4.2 WALL-MOUNTED CONTROL CABINET VERSION

This version has three-phase pumps without level sensors. The tank already has two level sensors, fitted inside the tank cover and the pump is controlled from the control cabinet outside the tank.

(2) The sound and light alarm is activated if the alarm sensor detects that the level of the tank has exceeded the alarm level and/or if the thermal protector installed in the box is triggered. This device is deactivated by pressing the Reset button inside the box.
This circuit is used for Manual/Automatic/Stop settings for a three-phase pump, via a three-position switch, with a thermal relay for pump protection. Always check the pump rotation direction. Set the thermal relay to the nominal value of the pump.

4.3 TOP CONTROL CABINET VERSION

This electronic device should be used for control of two single phase or three phase pumps. It also includes full protection for the installed pumps, and a LCD screen for easier communication with the user. Operation is very simple, using only four keys to move around the different menus.

In automatic operation, the pumps run alternately. If one pump only cannot remove all the input flow at a given point, the excess level sensor will be activated and the second pump will start up.

To avoid starting problems due to voltage drops on the mains supply, the two pumps never start up at the same time, one pump always starts first and the other 5 seconds later.

The circuit includes several devices to protect the pumps, together with breakdown prevention systems.

4.3.1 Prevention systems

By default, every 30 days, the Servicing LED lights up on the circuit as a reminder that a general check should be performed on the equipment. After servicing, press the ESC key. The reminder time can be configured.

Jamming prevention system:

The typical breakdown scenario of a jammed motor is very common with drainage pumps. This generally occurs when the pump has been out of service for a very long time, after prolonged absences. To resolve this problem, the circuit starts up as a preventive measure once every 24 hours of inactivity. This time can also be configured. On a preventive start-up, the pump is activated for a few seconds.

4.3.2 Protection systems

4.3.2.1 Intensity protection

The device controls the current consumption of each pump separately and checks that it is within maximum and minimum limits. These values can be configured and must be set for each type of pump. In the Display menu, the current consumption for each pump can be displayed.

4.3.2.2 Protection against dry operation:

The equipment checks that the pumps are not running when dry by reading the power factor of the pump. The PF value must be higher than the reference value set in the parameters menu. In the Display menu, the PF value for each pump can be displayed.

4.3.3 Corrective measures

If the protective measures detect an anomaly and the corresponding alarm is activated, corrective measures are then implemented to correct the anomaly and try to put the equipment back into operation. Even if the equipment is put back into operation correctly, the alarm triggered will be logged so that the origin of the breakdown can be checked.

When the protective system detailed above has deactivated the pump, the equipment will try to reactivate it on minute later. It will repeat this procedure a maximum of five times. If the error persists, the equipment will deactivate the pump, but the equipment will continue to operate with the other pump.

On three-phase pumps, if an error occurs due to excess current, the motor is probably jammed. In this case, if protection is activated, see the Parameters menu. Five more attempts will be performed by the motor, running in the reverse direction for a few seconds. This procedure generally has a high success rate.
1. LED indicating Pump 1 running.
2. LED indicating Pump 2 running.
3. LED indicating that an alarm is activated.
4. Equipment servicing reminder LED.
5. Increase or change screen key.
6. Decrease or change screen key.
7. Key to confirm the changes made.
8. Key to exit menus or cancel alarms.
9. LCD screen.

For the equipment to operate, once all the electrical connections have been made as detailed in the corresponding section, the circuit will automatically start to control the pumps. The equipment is programmed in the works, small adjustments only are required for smooth operation of the device.

⚠️ If the pumps are three-phase, check that the rotation direction is correct.

⚠️ To take maximum advantage of the tank volume, the stop time should be adjusted (see Parameters menu). This time must be set for each type of installation so that the pump empties the tank as much as possible before stopping (without draining the pump). Adjust this time so that when a pump stops, the level in the tank is minimum. If, when the pump stops, the level is still high, increase the time, if the pump runs without water before stopping, reduce the time.

### 4.3.4.1 Manual menu

This menu provides an easy way of checking operation of each pump, by running each pump separately, entirely manually.

⚠️ In this operating mode, there is no protection on the pump. If it runs dry, the circuit will not protect it!

![Manual menu diagram]

- To exit the Manual menu.
- Activate or deactivate Pump 1.
- Activate or deactivate Pump 2.

### 4.3.4.2 Alarms menu

This menu is simply for information. It displays the alarms that are activated, in chronological order, from the most recent to the least recent, i.e. the first alarm displayed in the last one activated.

In addition, for each type of alarm, it indicates the number of times it has occurred and whether the alarm signal is activated or deactivated at present.

![Alarms menu diagram]

Indicates the alarm type

- Indicates that the excess level alarm was activated 35 times
- Indicates that at present the excess level alarm signal is activated

- To exit the Alarms menu.
- To display the alarm after the one displayed.
- To display the alarm before the one displayed.

21
The following illustration shows the way in which alarms and their display mode are saved.

<table>
<thead>
<tr>
<th>ALARM TYPE</th>
<th>No. ACTIVATIONS</th>
<th>STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excess level alarm</td>
<td>2</td>
<td>ON</td>
</tr>
<tr>
<td>Int. max alarm Pump 1</td>
<td>3</td>
<td>OFF</td>
</tr>
<tr>
<td>Int. max alarm Pump 2</td>
<td>8</td>
<td>OFF</td>
</tr>
<tr>
<td>Dry run alarm s Pump 1</td>
<td>1</td>
<td>OFF</td>
</tr>
<tr>
<td>Int. min alarm Pump 1</td>
<td>0</td>
<td>OFF</td>
</tr>
<tr>
<td>Int. min alarm Pump 2</td>
<td>0</td>
<td>OFF</td>
</tr>
<tr>
<td>Dry run alarm s Pump 2</td>
<td>0</td>
<td>OFF</td>
</tr>
</tbody>
</table>

4.3.4.3 Display menu

This menu only displays the values of the circuit's internal variables.

- To exit the Display menu.
- To display the next parameter.
- To display the previous parameter.

All the screens displayed are detailed below, in order.

- **INT. POMPE 1**  5,3 A
  - Displays current consumption of Pump 1.

- **INT. POMPE 2**  0,8 A
  - Displays current consumption of Pump 2.

- **PF. POMPE 1**  0,85
  - Displays Power Factor of Pump 1.

- **PF. POMPE 2**  0,90
  - Displays Power Factor of Pump 2.

- **CONSUMATION POMPE 1**  2 kwh
  - Displays energy consumed by Pump 1.

- **CONSUMATION POMPE 2**  1 kwh
  - Displays energy consumed by Pump 2.

- **DEMAARR. POMPE 1**  195
  - Displays number of start-ups by Pump 1.

- **DEMAARR. POMPE 2**  194
  - Displays number of start-ups by Pump 2.

- **More ANTIKIL. POMPE 1**  1
  - Displays preventive start-ups by Pump 1.

- **More ANTIKIL. POMPE 1**  0
  - Displays preventive start-ups by Pump 2.

The various alarms that may be displayed are shown below.

**E. LEVEL ALARM**  2 OFF

- Displays excess level alarm. The alarm level pressure switch is activated.

**ERR. Imax Pompe 1**

- Excess current error. Pump 1 has consumed more current than the maximum permissible value. For example, because the pump is blocked or a short circuit has occurred in the motor.

**ERR. Imax Pompe 2**

- Excess current error. Pump 2 has consumed more current than the maximum permissible value.

**ERR. Imin POMPE 1**  1 OFF

- Pump 1's current consumption is less than the minimum value. For example, because the pump is disconnected or the motor destroyed.

**ERR. Imin POMPE 2**  1 OFF

- Pump 2's current consumption is less than the minimum value. For example, because the pump is disconnected or the motor destroyed.

**E. TRAV. SEC. B1**  1 OFF

- Pump 1 has been running dry, without water. This problem may be due to a fault on the level sensor, which has indicated water in the tank when there was none.

**E. TRAV. SEC. B2**  1 OFF

- Same as for pump 1 but with Pump 2.
Displays running time of Pump 1.

Displays running time of Pump 2.

Displays system operating time.

Displays the number of days to go before servicing the equipment.

4.3.4.4 Parameters menu

This menu is used to modify system configuration values. First we describe how to use the keys, below.

- To exit the Parameters menu, saving the changes made.
- To confirm the value of the present variable and go to the next one.
- To increase or change the value of the present variable.
- To reduce or change the value of the present variable.

All the parameter screens are detailed below, in order of appearance.

- **LANGUE**
  - FRANÇAIS
  - Used to choose the language for communication with the user.

- **Nbre DE POMPES**
  - 2
  - To select the number of pumps installed, 1 or 2.

- **TYPE DE POMPES**
  - MONOPHASEES
  - To select whether the pumps are single phase or three-phase.

- **DEMARR. COND. AUX.**
  - ON/OFF
  - If single phase pumps have been selected, you can choose whether you want to activate auxiliary starting with an auxiliary condenser connected to auxiliary outlet 1 or 2, depending on the number of pumps.

When this option is activated, the auxiliary starting condenser connects at pump start-up time and stays activated for 5 seconds, to allow the pump to start correctly.

⚠️ The auxiliary starting condenser should not be confused with the permanent pump condenser. In this configuration, the pump has 2 condensers. One permanent and the other only activated on starting. Consult the section on connection. Not all single phase pumps are suitable for connection of an auxiliary starting condenser, consult the pump manufacturer.

- **INVERSEUR DE ROTATION**
  - ON/OFF
  - If you have selected three-phase as the pump type, you can choose to activate the option of reversing rotation. When this option is activated, if the pump is still jammed, the circuit runs the pump in the reverse direction to try to free it.

- **TEMPS ANTIBLOC.**
  - 24 H
  - This parameter specifies the time during which a pump should remain inactive before a preventive start-up. To prevent jamming, this start-up only lasts one second.

- **TEMPS REVISION**
  - 30 jours
  - Indicates the frequency at which the circuit issues an installation servicing reminder. When this time is up, the circuit activates the Servicing LED.

- **INT. MAX. POMPE 1**
  - 4,5 A
  - Maximum intensity value - pump 1. If pump consumption exceeds this limit, the corresponding alarm is activated.

- **INT. MINI. POMPE 1**
  - 1,5 A
  - Minimum intensity value - pump 1. If pump consumption does not exceed this limit, the corresponding alarm is activated.

- **INT. MAX. POMPE 2**
  - 4,5 A
  - Maximum intensity value - pump 2. If pump consumption exceeds this limit, the corresponding alarm is activated.

- **INT. MINI. POMPE 2**
  - 1,5 A
  - Minimum intensity value - pump 2. If pump consumption does not exceed this limit, the corresponding alarm is activated.
STOP TIME 10 sec

This is used for timing a pump stop. Once the level signal is no longer received, the pump stops after this time has lapsed. This time is used to optimize tank emptying.

PF VALUE 0.70

Indicates the minimum value of the pump power factor, starting from which the circuit will deduce that the pump is running dry.

5. Repairs and maintenance

DANGER electrocution risk
Disconnect the DRAINBOX FL from the electrical supply before manipulating it.

DO NOT manipulate or repair
Manipulations or repairs must only be performed by the Official Technical Services. The user must only perform the manipulations indicated in this manual. The manufacturer is not responsible for any manipulations that the user may perform.

CAUTION in the event of a breakdown, replacement of the electric cable or manipulation of the pump must only be performed by the Official Technical Service.

DANGER sharp object
Take great care when handling the pump, since it contains extremely sharp elements.

5.1 PUMP REPLACEMENT

5.1.1 Replacing pumps without lifting kit

CAUTION Before replacing the pump disconnect all electrical cables.
5.1.2 Replacing pumps with lifting kit

CAUTION Before replacing the pump disconnect all electrical cables.

5.2 MAINTENANCE AND CLEANING

5.2.1 Routine maintenance

Check the state of the inside of the container periodically via the cover, and clean it at least once a year. Always comply with the local and/or national regulations, laws and standards in force.

5.2.2 Non-routine maintenance

Use appropriate equipment and safety gear. Comply with accident prevention standards. Lift and handle the pumps carefully, using the appropriate lifting devices.

Use genuine replacement parts only to replace worn or damaged components.

For pumping stations fitted with a lowering device, it is possible to remove the pump using the lifting/lowering handle, attaching a cable or chain.

Do not use the power supply cable to lift and transport the electric pump.
### 6. Possible problems, causes and solutions

<table>
<thead>
<tr>
<th>Possible breakdown</th>
<th>Cause</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>The pump does not start up and the general switch is activated.</td>
<td>No power supply.</td>
<td>Restore the power supply.</td>
</tr>
<tr>
<td></td>
<td>The thermal circuit breaker for the pump has been triggered.</td>
<td>Wait for the pump motor to cool down.</td>
</tr>
<tr>
<td></td>
<td>The thermal protection of the control cabinet is activated.</td>
<td>Reset (replace) the protection.</td>
</tr>
<tr>
<td></td>
<td>Control fuse on pump or auxiliary circuits blown.</td>
<td>Replace the fuse.</td>
</tr>
<tr>
<td></td>
<td>Possible problem on outside control device.</td>
<td>Check the device and the corresponding connection cables.</td>
</tr>
<tr>
<td>The electric pump starts running but thermal protection is activated immediately or the fuses blow.</td>
<td>Motor overload.</td>
<td>Check the working conditions of the electric pump and replace (reset) the protection.</td>
</tr>
<tr>
<td></td>
<td>Supply cable damaged.</td>
<td>Check the cable.</td>
</tr>
<tr>
<td></td>
<td>Thermal protection or fuses not appropriate for motor current.</td>
<td>Check and, if necessary, replace the components.</td>
</tr>
<tr>
<td>The electric pump starts running but a little while later thermal protection is activated or the fuses blow.</td>
<td>Lack of a power supply phase.</td>
<td>Check the supply.</td>
</tr>
<tr>
<td></td>
<td>Power supply voltage not within the motor's limits.</td>
<td>Check the working conditions of the electric pump.</td>
</tr>
<tr>
<td></td>
<td>The electrical cabinet is installed in a zone that is too hot or exposed directly to sunlight.</td>
<td>Protect the cabinet from heat sources and sunlight.</td>
</tr>
<tr>
<td>The electric pump starts running, but after a variable time, thermal protection is activated.</td>
<td>Intake water temperature too high.</td>
<td>Check the working conditions of the electric pump.</td>
</tr>
<tr>
<td></td>
<td>Presence of solid matter of excessive dimensions jamming the rotor.</td>
<td>Remove and clean the electric pump. If the problem persists, check the working conditions of the electric pump.</td>
</tr>
<tr>
<td></td>
<td>Presence of filamentous body jamming the rotor.</td>
<td></td>
</tr>
<tr>
<td>The electric pump starts up too frequently.</td>
<td>Water leaks on the check valve or in the installation.</td>
<td>Check the installation to locate the leaks. Repair or replace the components.</td>
</tr>
<tr>
<td></td>
<td>Incorrect adjustment of level switch LEVEL.</td>
<td>Check level float switch LEVEL.</td>
</tr>
<tr>
<td>The electric pump starts up but does not achieve the required performance.</td>
<td>Incorrect rotation direction, three-phase pumps only.</td>
<td>Check rotation direction and, if necessary, reverse two phases on the motor connection.</td>
</tr>
<tr>
<td></td>
<td>The delivery hose is blocked, the check valve is dirty or there is an air bubble.</td>
<td>Check the installation.</td>
</tr>
<tr>
<td></td>
<td>The electric pump is damaged or its internal parts are jammed.</td>
<td>See specific instructions in the pump manual.</td>
</tr>
<tr>
<td>General protection of the installation is activated.</td>
<td>Short circuit.</td>
<td>Check the connection cables.</td>
</tr>
<tr>
<td>Differential protection of the installation is activated.</td>
<td>Earth leak.</td>
<td>Check insulation of the electric pump and cables.</td>
</tr>
</tbody>
</table>
7. Transport and storage

To move the DRAINBOX FL correctly, use chains or lifting loops, or put the DRAINBOX FL on a pallet; after fixing it properly, lift using a fork lift truck to move it, or a crane.

**DANGER.** Never move the DRAINBOX FL while it is in operation.

If the lifting hooks are attached at points other than those indicated, the DRAINBOX FL could be damaged and operator safety could be endangered.

During lifting, all personnel must keep a certain distance away. Operators should wear protective helmets.

8. Elimination

After the installation, dispose of the packaging according to the applicable laws and if possible, recycle.

If it is necessary to scrap the motor, and therefore dismantle it, the applicable laws for selective disposal of residue must be complied with.

9. Dimension and weight

*Weight on characteristics page.

---

<table>
<thead>
<tr>
<th>MODELO / MODEL</th>
<th>CONEX.</th>
</tr>
</thead>
<tbody>
<tr>
<td>DRAINBOX ... 800 / 1200</td>
<td>Ø40mm</td>
</tr>
<tr>
<td>DRAINBOX ... 1400 / 1800</td>
<td>Ø63mm</td>
</tr>
</tbody>
</table>
DECLARATION OF CONFORMITY
The products mentioned above are in compliance with:
Directive 2014/35/UE (Low voltage): Norm
EN 60335-1 and EN 60335-2-41
Directive 2014/30/UE (Electromagnetic compatibility): Norm
EN 61000-6-1 and EN 61000-6-3
Directive 2006/42/EC (Safety machines): Norm
EN 809, EN 60204-1 and EN 12050-2

Signature/Qualification: Pere Tubert (technical office)