Safety instructions for preventing injury and damage to people and property (See figure 8)

A	Warning! Observe limitations of use.
B	The name plate voltage must be the same as the mains voltage.
C	Connect the unit to the mains via an omnipolar switch with at least a 3mm opening between contacts. Install a high-sensitivity (0.03A) differential switch as extra protection against lethal electric shocks.
D	If the supply cord is damaged, it must be replaced by an A.T.S.
E	Connect the unit to the ground.
F	Use unit only within performance limits indicated on the name plate.
G	Remember to prime pump.
H	Check for motor self-ventilation.
I	This apparatus may be used by children 8 years or older and persons with reduced physical, sensory or mental capacities, or lacking experience and knowledge, if they are supervised or receive adequate training on the safe use of the apparatus and understand the dangers. Children should not be allowed to play with the apparatus. Children should not perform the ordinary cleaning and maintenance tasks without supervision.
J	Be careful with hazardous liquids and environments.
K	Caution! Look out for accidental leaks. Do not expose pump to bad weather.
L	Caution! Avoid icing. Cut out power supply before servicing pump.

Contents

Warning for the safety of people and property

The following symbol  beside a paragraph indicates the possibility of danger as a result of not following the corresponding instructions.

DANGER electrocution risk Not following this instruction leads to a risk of electrocution.

DANGER Not following this instruction leads to a risk of injury to people or damage to property.

WARNING Not following this instruction leads to a risk of damage to the pump or the installation.

1. GENERAL POINTS

This manual is complementary to the standard installation manual for the swimming pool pumps.

The instructions we provide are intended to ensure the proper installation and optimum performance of swimming pool water circulation pumps equipped with ***Silenplus***® frequency inverter and ***ControlSystem***® valve position sensor.

Read these instructions before installing.

Keep them for future reference.

Following the installation and usage instructions and the electrical connection diagrams correctly ensures that the equipment will work properly.

Ignoring any of the instructions in this manual can lead to all kinds of consequences for which we accept no responsibility.

1.1 Product description

Silenplus pumps equip a standard electric motor with a built-in frequency inverter. They are designed for a single phase connection.

They have a radio-frequency transmitter to communicate with the ***ControlSystem***® and a Bluetooth® connection for remote control using smartphone applications.

The ***ControlSystem***® sensor is the position detector for a standard swimming pool filter 6-way multiport valve. It is equipped with electronic sensors for polar positioning and to control the motor.

The joint working of ***Silenplus*** pumps and the ***ControlSystem*** enables full control of the pump functions just by operating the filter valve.

1.2 *Silenplus Evopool*® functions

Filtration Plus:

System which achieves filtration optimisation to increase efficiency, with the resulting electricity saving, while adding a cycle to increase the effectiveness of pool surface cleaning.

EFFECTIVENESS: work cycles specially developed for use in pools achieve maximum effectiveness.

SAVINGS: a minimum of 80% electricity savings over standard pumps, with the resulting cost savings.

Backwash Plus:

Backwash system which, thanks to a specially developed cycle, increases process efficiency while shortening cleaning time, drastically reducing the amount of water used for efficient cleaning.

EFFECTIVENESS: reduction of backwash time and improved filter-cleaning efficiency.

SAVINGS: a minimum of 25% water savings over standard pumps.

2. HANDLING

It is supplied in suitable packaging to prevent it deteriorating during transport. Before unpacking the product, check that the packaging has not suffered damage or is misshapen.

Handle the product carefully, with the right tools.

3. INSTALLATION

This equipment is designed for use indoors.

3.1. Pump installation.

WARNING: Follow the installation manual instructions for the standard pump.

3.2. Electrical connection

The electrical installation must have a multiple separation system with a 3mm contact opening.

The system's protection will be based on a differential switch (Δfn = 30 mA).

The equipment is supplied with a power cable with plug.

Do not manipulate the equipment.

3.3 *ControlSystem* installation

Fit the ***ControlSystem*** to the multiport filter valve control. (See figure 1)

- Select a location as near as possible to the turning centre.
- Clean the surface with alcohol.
- Lift the protective stickers and plug the ***ControlSystem*** into the chosen place.
- Watch the "***ControlSystem***" position. Screw area should be closer to the rotation axis.
- Secure the assembly by tightening the tape under the control. Check that it is fixed properly.

4. START-UP

4.1 Starting up the equipment.

Follow the installation manual instructions for the pump to start it up properly.

4.2. Initial configuration

The first time you start it up you need to link ***Silenplus*** with ***ControlSystem*** (See figure 2)

WARNING: It is very important to follow the order of the operations described here:

4.2.1 Starting up the ***Evopool***

- Connect the ***Silenplus*** pump to the power supply.

The system will start up and a set of lights indicates that it has been activated.

If a ***ControlSystem*** has not already been linked to it, the pump will not start up.

Silenplus is on standby waiting for the link to be established. The 3 leds flash together.

4.2.2 Activating the ***ControlSystem***

To prevent the battery running out before the equipment is started up, the ControlSystem has an internal ON/OFF switch that must be activated (See figure 2)

CAUTION: Do not approach magnetic elements to ***ControlSystem*** during this operation.

Ensure that no magnetic fields can affect the proper operation of the system.

WITH THE PUMP CONNECTED TO THE ELECTRICAL CURRENT (see 4.2.1):

- Make sure the valve is in the intermediate position between 1 and 4
- Lift the cover, loosening the screw.
- Activate the ***ControlSystem*** by moving the mini-switch to the "ON" position.

When the battery is connected, ***ControlSystem*** transmits a unique code for an interference-free link. Flashing leds indicate that proper communication has been achieved. The green LED will light.

- Replace the cover and fix it with the screw. Torque: 0.2 Nm.

4.2.3 Calibrating the ***ControlSystem***

The 6 valve positions must be indicated to the system. For this purpose, use the following calibration process (See Figure 3):

1 - Move the valve control to position 4.
Wait for the green LED is illuminated.
2 - Move the valve control to position 6.
Wait for the green LED is illuminated.
3 - Move the valve control to position 2.
Wait for the green LED is illuminated.
4 - Move the valve control to position 5.
Wait for the green LED is illuminated.
5 - Move the valve control to position 3.
Wait for the green LED is illuminated.
6 - Move the valve control to position 1.

The pump will start up in Auto ***Filtration Plus*** mode. The corresponding LED will come on.

4.3 Multiple system

In an installation with several pieces of equipment, ***Silenplus*** must be started up and the ***ControlSystem*** activated in order.

Each piece of equipment is linked using a unique code to prevent interference between them.

A ***Silenplus*** pump in standby mode will be linked to the first ***ControlSystem*** activated.

WARNING: activate the ***ControlSystem*** of the valve for the pump on standby.

4.4 In the absence of *ControlSystem*

If you do not have ***ControlSystem*** or prefer not to use it, the system can work just as well manually.

Ignore the activation and calibration operations, switch to Manual mode and then connect the ***Silenplus***.

4.5 Changing the *ControlSystem*

If it is necessary to replace the ***ControlSystem*** in a system that is already linked, you will need to delete the old serial number before linking the new one.

To do this, with the ***Silenplus*** pump connected to the power supply, keep the **F** button pressed down for 10 seconds. Flashing leds indicate that the operation has been carried out correctly.

The previous serial number will be deleted and the system will go into “link standby” mode. Proceed as indicated in 4.2.2.

5. OPERATION

5.1 *AUTO* mode

This is the default operating mode.

The pump carries out the most appropriate function considering the position of the filter valve. (See fig. 3)

In FILTRATION position: ***Filtration Plus*** function

- In BACKWASH position: ***Backwash Plus*** function
- In CLOSED position: pump stopped.
- In any of the other positions: the pump operates at 100% power.
- When you operate the valve control, the pump stops automatically to make the valve movement easier.
- In any intermediate position, the pump remains stopped.

To change the working mode, simply move the valve to the desired position.

To prevent accidental operation, the electronic response is delayed by 1 second. The flashing red LED indicates that proper communication has been achieved.

Move the valve gently.

WARNING: the valve configuration must correspond to the 6 standard positions, according to figure 3.

For other valve configurations, contact your technical service.

5.2 *MANUAL* mode

When you press the **M** key, ***Silenplus*** ignores the ***ControlSystem*** signal and runs one of the pre-set functions:

The MANUAL LED comes on.

The pump starts up at a fixed, programmable speed. The standard setting is 2,300 RPM (40 Hz). This is what is known as the MIXED CYCLE (MISC. CYCLE).

If you press the **F** key, it runs through the various ***Silenplus*** functions in sequence.

Between each function, the pump stops to allow valve movement or other operations.

The sequence is:

1. Mixed cycle (MISC. CYCLE).
2. Stop.
3. ***Filtration Plus***.
4. Stop.
5. ***Backwash Plus***.
6. Stop.
7. Mixed cycle...

The lit leds indicates the function selected at all times.

When you press the **M** button again, you leave Manual mode to go back to Auto.

5.3 No water fault and retries.

In ***Filtration Plus*** mode, the system is regularly monitored to check that the pump is not operating without water.

If ***Silenplus*** detects the pump is working without water it stops the motor.

The system will attempt to start up again after 1', 5', 15' and 1 hour (Fig. 5). If the retries fail, ***Evopool*** will remain in permanent fault mode.

An LED sequence indicates the fault status. (See section 9)

To interrupt the retry cycle or to restart from permanent fault mode, press the **F** key.

5.4 System status

Espa offers installers and users the ***EspaEvopool*** application for monitoring the system status and interacting with ***Silenplus***.

They must have a Smartphone with Bluetooth connectivity and install the application ***EspaEvopool*** available in www.espa.com and in *PlayStore* or *AppStore*.

With this app, it is possible to switch between *Manual/Auto* modes and use all functions.

6. ADVANCED CONFIGURATION

Different speeds can be set to adjust the functions to the characteristics of the installation.

The function being run will be configured.

To configure a function, first select it, either in Manual or Auto mode, and at the same time press **M** + **F** for 5 seconds.

All the speeds of the selected function will return to the factory settings [= fs]

To increase or decrease the speed, press M or F:

M = +1 Hz
F = - 1 Hz

- Configuring ***Filtration Plus***.

  The filtration speed is set.

  · Minimum = 20 Hz (1,600 RPM), [= fs]
  · Maximum = 50 Hz (2,900 RPM)]

- Configuring ***Backwash Plus***.

  The maximum and minimum speeds are set, always maintaining a differential of 20 Hz between them

  · Minimum = 20/40 Hz (1,600/2,320 RPM), [= fs]
  · Maximum = 30/50 Hz (1,740/2,900 RPM)

- Configuring the Mixed Cycle (Manual only)

  The factory setting is 2,320 RPM (40 Hz)

  · Minimum = 20 Hz (1,600 RPM)
  · Maximum = (50 Hz (2,900 RPM)

If M and F are not pressed for 5 seconds the new values are stored and the configuration mode is deactivated.

Silenplus can also be entirely configured using the ***EspaEvopool*** application.

7. BUILT-IN TIMER

The ***Silenplus*** pump has an internal clock that can operate as a start and stop timer, making external programming unnecessary.

With this function, ***Silenplus*** can operate entirely independently.

ATTENTION: the programming and maintenance of the timer is only possible through the ***EspaEvopool*** app.

7.1 Activating the timer.

DANGER. Electrocution risk.

Never open the ***Silenplus*** cover without turning the power supply off at least 5 minutes beforehand.

- Lift the ***Silenplus*** cover by loosening the 4 screws. (See figure 6)
- Activate the Timer using the mini-switch, moving it to the “ON” position.
- Replace the cover and fix it with the 4 screws. Torque: 0.5 Nm.

7.2. Time setting.

Link ***Silenplus*** with the external device using Bluetooth, following the instructions on the device.

Run the ***EspaEvopool*** app and follow its indications.

8. MAINTENANCE

***ControlSystem*:**

If ***ControlSystem*** is not communicating with ***Silenplus*** it may be necessary to replace the battery. Proceed as in figure 7.2.

It is a 1.5 V, CR2450 type battery.

***Silenplus*:**

Our ***Silenplus*** equipment is maintenance free.

The Silenplus time programmer works with a CR1220 battery. To replace it proceed according to figure 7.1

Clean the equipment with a damp cloth and without using aggressive products.

In freezing weather, take the precaution of emptying the pipes.

If the equipment is going to be inactive for a long time, you are recommended to dismantle it and keep it in a dry, well-ventilated place.

WARNING: in case of a breakdown, the equipment must only be touched by an authorised service technician.

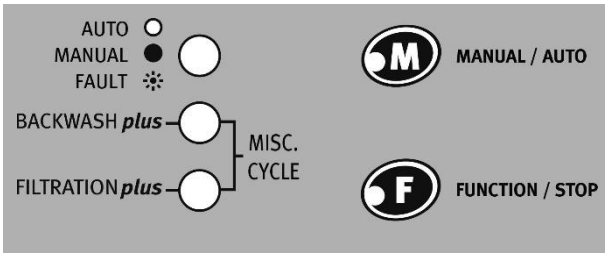
The list of official technical services can be found at www.espa.com.

When the time comes to throw the product away, it does not contain any toxic or polluting material. The main components are duly identified so you can dispose of them selectively.

This product or parts of it must be disposed of in an environmentally sound way, use the waste collection service. If this is not possible, contact the nearest ESPA service workshop.

9. LED INDICATORS

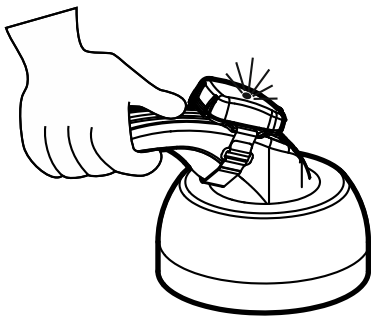
In *Silenplus* pump*:*



The possible LED combinations and their meanings are:
0 = LED OFF
1 = LED ON
2 = LED flashing slowly
3 = LED flashing quickly

AUTO/ MANUAL/ FAULT	BACKWASH *Plus*	FILTRATION *Plus*	Equipment status
Functions			
0	0	1	***Filtration Plus*** function in Auto mode.
0	1	0	***Backwash Plus*** function in Auto mode.
0	1	1	Mixed Cycle function in Auto mode. Motor at 100%.
1	0	1	***Filtration Plus*** function in Manual mode.
1	1	0	***Backwash Plus*** function in Manual mode.
1	1	1	Mixed Cycle function in Manual mode.
2	0	0	"Standby" mode. The equipment has power, motor stopped. a) Valve in intermediate positions or position 6 in Auto mode. b) Stop function in Manual mode. c) Timer OFF position.
Configuration			
3	3	3	Initial configuration: standing by for link with ***ControlSystem***
(...together...)			
3	0	1	***Filtration Plus*** speed setting.
3	1	0	***Backwash Plus*** speed setting.
3	1	1	Mixed Cycle speed setting.
Errors			
2	1	2	No water error. Start-up retry attempted.
2	1	1	No water error. Full shut-down.

When moving the control of the ***ControlSystem***:



Number of flashes	*ControlSystem status*
3	The ***ControlSystem*** is not linked to any ***Silenplus***.
2	Communication error. Call for service.
1	The ***ControlSystem*** works correctly.
0	Replace the ***ControlSystem*** battery