Operating instructions

ENDLESS BELT FILTER S-/G-MODEL

EBF ECO, 500, 800,1200, HF200

Smartpond®

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1 Read first – Pre-Information

Dear customer

Congratulations on your Smartpond® PROline (EBF-PRO) continuous band filter. Our wish is that you enjoy your filter for a long time.

To ensure that your filter works properly, please read this manual carefully and keep it in a safe place so that you can always refer to it if you have any questions.

If you need further information, or if problems arise that are not covered in sufficient detail in this manual, please ask the dealer where you purchased the filter for the information you need, or contact us directly.

In addition, you will find further information and useful tips on our website www.smartpond.swiss. Here you can also see technical drawings, films on the function and technical innovations etc.

Use of this BA

These Operating Instructions (BA) provide the installer of the system, the owner and competent persons with important information on installation, maintenance and general information on the safe use of the system

Usage

The described system may only be operated for its intended use within the defined area of application.
For the filtration of special liquids and for any application in the industrial sector, the manufacturer must be consulted.

As intended use

Smartpond® endless belt filters are basically designed for cleaning and filtering solids from liquids.
Applications include industry, fish farming, sewage treatment plants and fish and swimming ponds.

Liability

If the system is operated outside the described field of application, or if the system is modified, the system is no longer used in accordance with its intended purpose. In such cases the manufacturer does not accept any liability.

The filter control unit has various sockets which are programmed together with the existing safety devices. To ensure safety, the UVC (switches off when the protective cover is open) and pond pump (switches off when the water level is too high or too low) must be operated in the sockets provided for this purpose.

Disassembly	Any disassembly or removal of a Smartpond® filter system may only be performed by an authorized Smartpond® dealer, qualified personnel or with their approval/instructions.
Safety	Before working on the system, disconnect the power cable from the mains.
Biomedium	The biomedium must not be smaller than 15mm, because smaller parts could get into the mechanics.

1.1 Symbols and terms used

	**Warning**	This symbol indicates a warning which, if ignored, can lead to injuries or considerable damage to property. These warnings must be observed!
	**Note**	This symbol draws attention to important information. Failure to observe this information may result in damage to the system or faults.
	**G-Modell**	Text or description concerning the G-model (pumped version)
	**S-Modell**	Text or description concerning the S model (Gravity version)

Annex	Complete Smartpond®Filter system as described in this manual.
Warranty	**For warranty claims it is imperative that the system is left unchanged in its original condition and verifiably protected from direct weather influences (sunlight / rain), especially frost-proof, as well as levelled and installed over its entire surface.** **Any alterations, adaptations, conversions, etc. to the system will result in the loss of all warranty claims.**
Owner of the Unit	The person or company who has the power of disposal over the installation and is responsible for its operation and maintenance.
Expert Persons	Persons who are trained to carry out installation and maintenance work. Persons who are aware of the potential dangers and who have the necessary tools and aids.
Assembly work	All necessary work and measures, which are necessary for a safe and proper commissioning of the system are necessary.
Error	An operating condition that ensures the safe operation of the plant limited or impossible.

1.2 Responsibilities

Duties of the Owner

The owner of the installation must ensure that:

- the plant is kept in safe operating condition,
- this BA is available to competent persons,
- the plant at regular intervals (**usually 2x per year**)
- is maintained.

Responsibility

Only competent persons may carry out the following work:

- Installation
- Connection of the electrical components
- Adjusting the electrical components
- all maintenance work

Manufacturer

Name	*Smartpond GmbH*
Street	*Friedrichsfehner Straße 21*
Place	*26188 Edewecht*
Country	*Deutschland*
Contact	*www.smartpond.swiss*

Local dealer / Subcontractor / Distributor

(Firmenaufkleber)

2 Technical data

The technical data correspond to the purchased corresponding model. Details are available on the corresponding website. See www.smartpond.swiss : Click on the endless belt filter and select the desired type.

2.1 Dimensions inlets and outlets

The link "exploded view" is also located on the website mentioned above. Here are the dimensions of the inlets and outlets for the corresponding model

2.2 Models

Depending on the model ordered, you will have a G or S model. They do not differ in design, only in their function. Details are described in the chapter "mechanical installation".

Note	The purchased filter is manufactured including a bio chamber. The filter area is separated from the bio-chamber by the bio-dividing plate. In order to prevent biomedium from entering the filter area (which could damage the filter band), the biomedium must always be larger than 12mm. A biomedium with a minimum size of 15mm is sufficient, ideally 17mm.

G Modell

The pumped version is ideal for koi and pond owners who have installed a pump directly in the pond or in a collection shaft and pump the polluted water into the filter. With this system, the outlet of the filter bio-stage is above the pond level. The water flows back into the pond by gravity.

S Modell

The gravity version is suitable for koi and pond owners who have bottom drains and/or floats installed in the pond. The pond water flows through large pipes directly into the Smartpond® filter. The cleaned water is pumped back into the pond by means of a pump-pe.

2.3 Electrical supply line

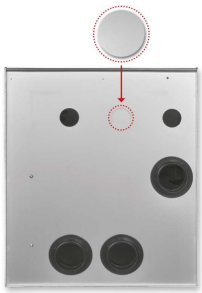
The filter is connected via a standard household socket.

It is operated with a voltage of 230V AC (alternating current) and must be protected with a 16A fuse on the supply line side by the operator.

Warning	**Ground fault circuit interrupter:** **During the electrical installation of the system, it must be ensured that the power supply is routed via a residual current circuit breaker.**

Further details for commissioning are described in the chapter "Electrical Installation".

3 Installation



3.1 Delivery form

The systems are delivered pre-assembled.
The unused tank lead-throughs can be closed from the inside with silicone and the supplied discs.
(see picture)
Observe or carry out points 3.2 and 3.3 for preparation for commissioning.

3.2 Mechanical installation

Note	The filter as well as the accessories must be protected against direct weather influences such as sun, wind, rain and cold. It is imperative that the filter is positioned and set up frost-free on a stable foundation. If this is not the case, no guarantee can be claimed for damage that could be caused by frost. The minimum distances to the wall of at least 15 cm for belt adjustment and at least 50 cm on the motor side (depending on the model) must be kept free for maintenance work.

The filter must be positioned horizontally on a stable foundation and levelled out. Ideally the filter should be placed on a thin layer, e.g. Styrodur. This will help to level out uneven surfaces and prevent scratches on the filter bottom.

Note (G Modell)	It must be ensured that the return flow to the pond is through a sufficient number of pipes so that no backwater can occur in the filter.

Note (S Modell)	The upper edge of the filter is positioned 12cm higher towards the water level of the pond. The dimension of 12 cm is a minimum dimension and must not be undercut. Ideally, the maximum water level in the pond should be statically limited by a drain. If the filter is installed higher than 12cm above the water level in the pond, the filtration capacity will decrease as the area of the filter band is no longer fully used.

The filters are equipped with welded pipe sockets for D110mm pipes.

Note	Each inlet to the filter should be fitted with sliders. This ensures that the inlets can be closed if work is necessary on the filter (e.g. cleaning work).

3.2.1 Filter inlets (water inlet)

The filters are equipped with welded pipe sockets for D110mm pipes.

Note	Each inlet to the filter should be equipped with gates. This ensures that the inlets can be closed during necessary work on the filter (e.g. cleaning work).

With the G-version or high pumping capacities, the water quantity should be distributed over several inlet pipe connections so that the water enters the filter as smoothly as possible.

3.2.2 Filter outlets (Water outlet)

Filter outputs

Smartpond® endless band filters are supplied with adhesive tank fittings for use in the outlet openings (corresponding to the number of 110mm outlets). These must be inserted prior to installation of the filter (please note the instructions below!).
The additional 70mm outlets are intended for internal pumps and can be used individually.
ATTENTION: NO tank screw connections are supplied for this. If these openings are not required, the corresponding number of stainless steel discs (d= 100mm supplied) are used to close the openings if required (brush the edge of the discs with silicone without gaps and press the opening from the inside so that no more water can escape).

Note	Short pieces of pipe should always be glued into the PVC tank screw connections on the installation side, onto which pipes with sealing rings can then be inserted, ideally quality rubber sleeves. This ensures that the inlets can be removed at any time without having to saw off the pipes.

Note	It is particularly important to ensure that the water return to the pond is large enough to prevent backwater in the filter.

3.2.3 Dirty water drain

Dirty water drain

The waste water drain is located on the motor side of the filter. Please take this into account when planning.

Dirty water drain with 110mm arch

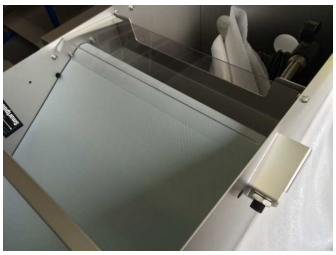
3.2.4 Safety overflow

Function

If for some reason the dirty filter belt is not transported any further, the water level in the filter module rises and the pond water passes over the upper edge of the (non-visible) bio-divider plate into the dirty water drain.

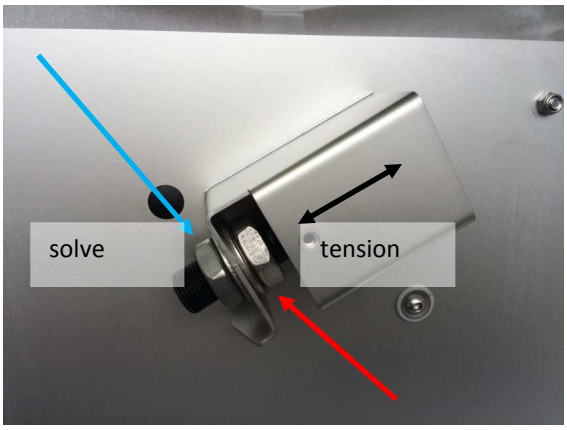
3.2.5 Belt adjustment

The PROline now has an integrated belt regulation, with which a possible course of the filter belt can be corrected.



The belt adjustment is located on the right side (non-motor side) of the EBF PRO

To readjust the filter band, first remove the cover of the clamping device using a 4mm Allen key.



The rod end can be adjusted using the two adjusting nuts (SW 30mm): To do this, first loosen the outer nut (blue); the adjustment is made with the inner nut (red).

- Tightening the nut ("tighten"; rod end moves upwards) causes a correction of the strap to the LEFT (towards the mo-tor side).
- Loosening the nut (rod end moves downwards) causes the filter band to be corrected to the RIGHT (towards the control side).

Warning

Only after a few rotations does the correction become visible. To do this, activate the filter belt with the manual button on the control unit (FILTER BELT).

After completion of the belt adjustment, the lock nut (blue) is tightened again (hand-tight is sufficient), and the cover is reattached and fixed with the Allen screw.

3.2.6 Individual

Modell

In order to be able to maintain a certain water level for the biology in the bio-tub, the bio-tub outlet outside the bio-tub must be led upwards with a 90° bend and a T-piece must be used to make a branch to the pond. The pipe is guided to the upper filter edge. The height arrangement of the T-piece results in the water level in the biotub (see picture).

T-exit pipe to the pond (not included in delivery)

The height from the floor to the middle of the T-branch should be set to approx. 45-50cm for EBF or 30-35cm for EBF ECO.

Overflow pipe

An additional overflow pipe (G-piping; included in the scope of delivery of the G-model) is installed in the filter. This serves as an overflow protection and has a height of 65cm above the floor, in case the filter basket in the bio-tub should become clogged with dirt. The safety opening at the top may only be covered by a coarse-meshed net and should normally be completely open.

Note

To prevent biomedium from entering the pond through the G-piping during regular operation, a biomedium larger than 12 mm, ideally 15 to 17 mm, must be used.

Positioning of the Pond pumps

Feed pumps can be set up in the biotub or outside "dry".

If an internal pump is used, it must be ensured that no biomedium enters the pump. If the pump used does not have an appropriate protective grille in the suction area, the Smart-pond® S suction piping for the corresponding filter can be used optionally.

3.3 Electrical installation

Warning	Before performing any work on the filter, the mains plug must be disconnected for safety reasons.

Your PROline Filter is a "Plug & Play" system. This means that after connecting the lines for the various inputs and outputs (these are disconnected for the dispatch of the system), only the mains plug has to be plugged into a socket protected by an RCD and the system is ready for operation.

All relevant settings in the controller have already been made according to the order. Irrespective of this, further individual adjustments are possible at any time (see supplementary PROline control system operating instructions).

The control unit must be installed in the place provided for this purpose (preferably on the filter, see point 3.3.1).

Attention	**The control box must be protected from direct sunlight/rain/water and moisture, and suspended in a frost-free environment.**

Warning	**Ground fault circuit interrupter:** During the electrical installation of the system, it must be ensured that the power supply is routed via a residual current circuit breaker.

The load of the plugs on the control box is designed for max. 16A in total.

3.3.1 Mounting the control unit

The screws for mounting the control unit are attached to the top of the control unit in a separate bag.

There are two possibilities for attaching the control unit to the filter:

Pos. Discontinuation site

Pos. Motors site

Taking into account point 3.3 (weather conditions), the control unit can also be installed at any other location. The cable length of outputs and inputs is 5 m, which must be taken into account accordingly.

	**Note**	If required, extension cables can be ordered so that the control unit can be installed max. 5m away from the system.

3.3.2 Connecting oft he electrical terminals

3.3.2.1 In- and Outlets

E1 E2 E3

A11 A12 A13

The inputs of the controller are color-coded, as are the corresponding lines of the sensors. The cables are connected according to the colour coding and tightened with the lock nut on the plug.

Level sensor filter E1 The sensor measures the water level in the filter and has the dual function of a float switch and overflow (G model) or dry run protection (S model).

Refill sensor / Temp.Control E2 Depending on the option ordered, this input is used for the sensor for refilling the pond, or alternatively as a temperature sensor.

UVC-Sensor E3 If the option is ordered, the contactless cover switch (inductive proximity switch) is plugged into this input so that the high-performance amalgam UVC is switched off when the cover is opened.

For the outputs, the corresponding actuators must be plugged into the designated socket and tightened with the lock nut.

Fault Lamp A11 This output is intended for the connection of an external warning lamp (option) Alternatively, an automatic feeder can be connected here (if the option is ordered accordingly)

Refill Valve	A12	Output for switching the solenoid valve if the "Refill" option is ordered. The solenoid valve is used for automatic refilling of the pond water according to the selected program.
Belt Drive	A13	Power output 24V for the belt drive of the endless belt filter. After the plug is inserted into the socket, it is secured with a bayonet lock.

⚠	**Achtung**	When connecting the cables, make absolutely sure that the correct ones are connected to the corresponding plug-in inputs.

3.3.2.2 Sockets

The 230V sockets are intended exclusively for controlling the filter and must not be used for any other purpose. The socket outlets are protected with fine-wire fuses (slow blow) according to the specified size. These fine-wire fuses are located above the respective socket, accessible from the outside.

A1 A2 A3

Jet Pump	A1	The internal spray pump (included as standard) is connected to this socket.
UVC	A2	Output for the high performance amalgam UVC. When the UVC package is purchased, this output is switched in connection with the filter functions (especially with the UVC protective cover).
Pond Pump	A3	230 V output for the pond pump. It is absolutely necessary to connect the pond pump to this socket, as this is where the dry run protection (S model) and the overflow protection (G model) are implemented.

⚠	**Attention**	When connecting the cables, make absolutely sure that the correct cables are connected to the corresponding inputs/outputs.

	Note	To be able to guarantee all safety functions, the pond pump pen and pressure rinsing pump, as well as the submersible UV-C if an option is available, must be plugged directly into the control box.

3.4 Connecting the level sensors

Depending on the type of filter purchased, the level sensor is located in the filter chamber (G model), or in the bio-camber (S model).

G-Model

S-Modell

The level sensor reacts to water pressure and is very insensitive to external influences. The water level is measured with millimetre accuracy in the filter or bio-chamber and displayed and processed in the control unit.

For transport, the level sensor is unscrewed and must be screwed back in at the intended place (see picture above) before commissioning. Make sure that the sensor with the appropriate seals closes the intended opening waterproof.

Sensor with plug connection to the OUTSIDE, then make sure that the PVC seal is inserted and push the sensor through the provided opening. Fiber seal from INSIDE and screw on locknut.
Align the sensor ("nose" to 1:00 o'clock, so that the angular connector goes away downwards) with SW27: Tighten lock nut with SW32.

The connecting cable of the level sensor must be connected to the sensor with the angled plug. To do this, connect the plug with the cable downwards accordingly and then secure it with the knurled nut.

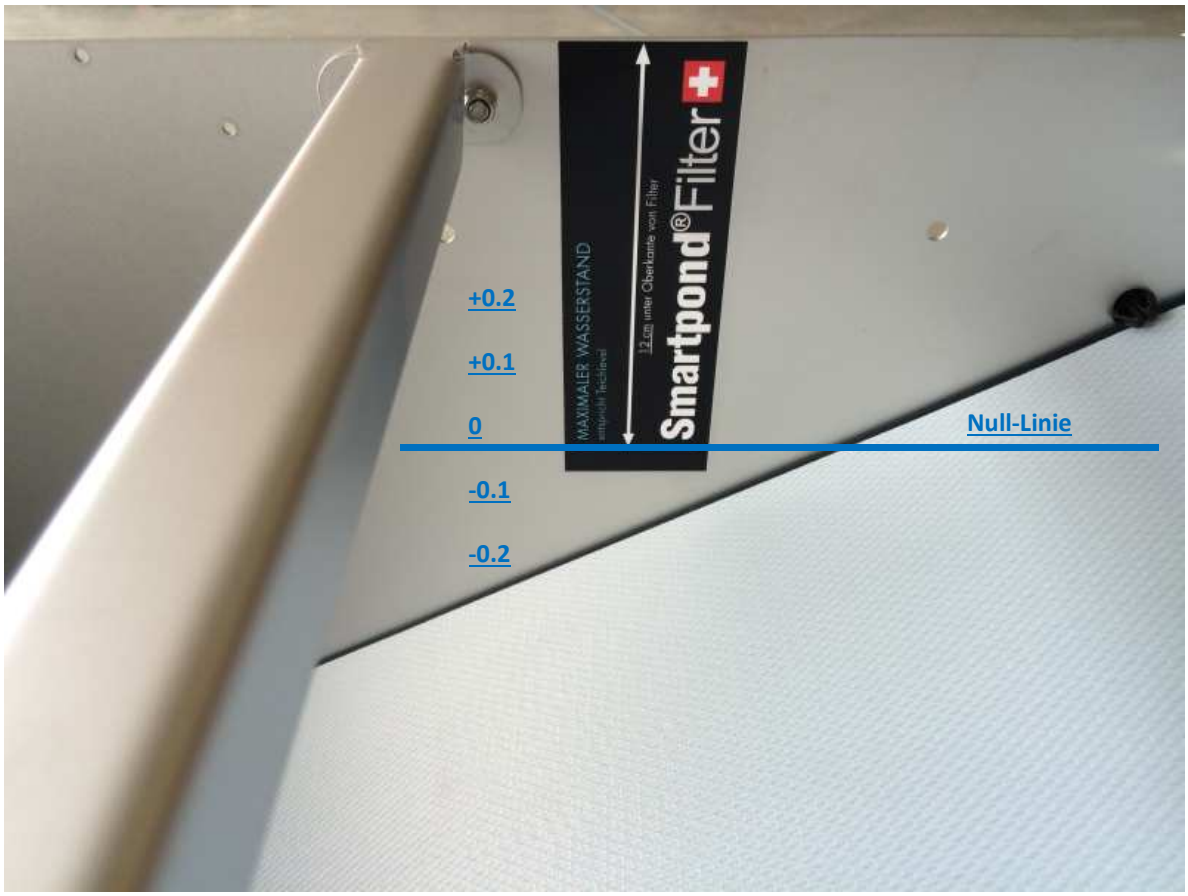
3.5 Commiddioning

After the filter has been correctly positioned, all inlets and outlets have been installed and all cables are correctly connected, the power cable can be connected to the power supply (via a socket protected by an earth leakage circuit breaker!

4 Functionality

After switching on the control unit, the filter is already ready for use and the filtering of your pond begins. No further settings are necessary.

The zero line is decisive for the settings and values of the level sensors. This is located 12cm below the upper edge of the filter (see corresponding sticker) and ideally corresponds to the upper edge of the pond level in the S-version. This zero line can be adjusted if necessary (if the filter had to be installed higher, or if the water in the pond is per-manently lower).



4.1 Operating elements Control PROline

For extended functionality and various possible adaptations there is a keyboard on the controller:

4.1.1 Left keypad

On the left side is the keyboard block for direct control of the individual functions

Clean/Reset This can be used to trigger a complete manual cleaning cycle. Pressing once briefly starts the cleaning cycle with the set parameters. Pressing the button for a long time (>3 seconds) initiates an intensive cleaning cycle.

Filter Belt As long as this key is pressed, the filter belt runs (without spray pump)

Pump ON/OFF By pressing this key the pond pump can be switched on and off. When the pump is switched off manually, the "P" flashes on the display.

Jet Pump As long as this button is pressed, the pump runs to clean the filter belt (the filter belt itself does not move).

Water Refill If the water stop option is activated (available as an option), this button takes you to the water stop submenu.
If you remain on this button for longer than 3 seconds, a manual water stop is triggered. This stops automatically after the preset time (default: 2 minutes).

4.1.2 Right keypad

On the right side is the keyboard block for menu navigation. The menu navigation was designed so that most settings can be made intuitively.

MENU Pressing this key takes you to the menu structure of the PROline controller.

INFO During operation, various filter information can be called up by pressing this button, including the last history.

BACK Pressing this key within the menu takes you back to the previous level.

HOME Pressing this key exits the menu level and returns you to the display during operation.

Arrow key Use the arrow keys to move within the menu. They are also used to increase or decrease values.

OK Use the key to accept changes or values.

4.2 Description of function

General

The present description in chapter 4.2 is intended for the normal operation of the filter.
All default values are already preset when the filter is delivered. The filter can be put into operation directly with the present values.

Individual adjustments can be made within the released ranges (times, as well as values of the level sensors etc.). Instructions for this can be found in the "PROline Control" operating instructions.

Operating modes

Normally the EBF PRO runs in automatic mode (this is the default setting on delivery). Other operating modes are described again in detail in the "PROline control" manual.

The following operating modes are available:

Emergency operation

If the level sensor fails, the Smartpond® filter can be run in emergency mode. In this mode, the flushing times are carried out over a fixed cycle - independent of the water level.

Winter operation

In winter operation, fixed times are set which lead to a cleaning cycle. Since too little dirt accumulates in winter, the filter would possibly only clean once a week. Winter operation is suitable for achieving a continuous cleaning interval.

Intensive cleaning

Intensive cleaning triggers a cleaning cycle in which the filter belt rotates more slowly along its entire length and is continuously cleaned by the rinse pump. After one complete rotation, the control system switches back to the automatic mode.

The process can be aborted prematurely at any time with the OK button.

Pressure washer

When operating "high pressure cleaner", the conveyor belt runs extremely slowly. This mode is intended for external cleaning of the belt (e.g. with a high-pressure cleaner or a soft brush).

The process can be aborted prematurely at any time by pressing the OK button, the control then automatically switches back to the Auto mode.

4.2.1 Rinsing process (Autom. Mode)

Start cleaning cycle
B1 (Level Sensor)

If the water level of level sensor B1 falls below the set value (default value: -35.0 cm), the cleaning cycle starts. For this the spray pump (output A1 = spray pump socket) is activated.

Delay time
Band launch

After a fixed delay time of 1 sec. the time "Delay time belt start" (delay conveyor belt) starts adjustable from 0.1 to 10 sec.
Default value: 0.1 sec.

After this time has elapsed, the conveyor belt starts (output A13)

Band running time

The conveyor belt runs for the set time "belt running time", adjustable from 1 to 20 seconds.
Default value: 12 sec.

End of cleaning cycle

The conveyor belt stops after the belt running time has expired. The spray pump continues to run for the pre-programmed time of 1 second, so that no dirt remains on the belt and can enter the clean bio-chamber.

Flushing pause

After the spray nozzle has stopped, the delay time "flushing pause" (waiting time) starts, adjustable from 30 to 120 sec.
Default value: 90 sec.

A new cleaning cycle is only possible after the waiting time (with signal from the float sensor)

4.2.2 Protection belt drive

Current monitoring

The Smartpond® endless belt filter is equipped with an automatic current monitoring system.
This measures the current consumption of the drive motor and limits the maximum permissible current increase.

Belt drive fault

After reaching the maximum current for the belt drive, it is switched off. After 5 (five) unsuccessful attempts to start the motor, it goes into fault mode.

In this case the display appears: Current monitoring belt drive

RESET of the fault

After pressing the "Clean/Reset" button, the fault is reset and the system continues running in normal mode.

4.2.3 Dry / overflow protection system (optional)

With the PROline endless belt filter, the dry/overflow protection is always automatically active. This serves to switch off the pond pump at the corresponding signal of the level sensor. At the same time the UV-C is also switched off to prevent the UV-C from "lying dry" in the event of a fault.

After reaching the normal state (exceeding the critical value) the pond pump switches on again with a delay of 30 seconds.
After a further delay of 60 seconds the UV-C also switches on again.

In the pumped version, the level sensor is located at the top of the filter chamber and switches off the pump before the filter overflows (overflow protection; default value = +2.0cm)!

If the water level in the gravity version falls below the level of the set value; depending on the filter size (default value approx. -55.0 cm), the pump and UV-C are switched off. As a result, the pump and biology do not run dry (dry-running protection).
The UV-C is switched on with a 60 second delay when normal operation is resumed.

Function

These protection options provide additional protection for your pond and pump.

Special case

If the dry run / overflow protection is activated 3 (three) times within 15 minutes, the system displays "Water circuit fault".

In this case the display and the belt run flashes, both the spray pump are deactivated. In addition, if the "warning lamp" option is ordered, it is activated and flashes.

This avoids that in case of possible faults (e.g. blockage of inlets or outlets) the pond is pumped empty by continuous flushing.

RESET of the fault
After pressing the "Clean/Reset" button) the fault is reset and the system continues to run in normal mode.

4.2.4 Integrated Diving-UV-C (optional)

The Smartpond® Immersion UV-C can be integrated directly into the filter.

To do this, the UV-C must be clipped into the holders provided for this purpose behind the UV-C tape protection plate, as otherwise the filter tape could be attacked and damaged by the UV-C rays.

The filter is additionally equipped with a UV-C cut-off, when the filter is purchased with a submersible UV-C.

Connection

The Smartpond® Immersion UV-C is connected to the control box at socket A2.

Option

The plug for shutdown is plugged into socket L5 (see chapter Connections). This automatically switches off the diving UV-C when the cover is opened.

Warning

If the optional Diving UV-C was not ordered when the filter was purchased, and a UV-C lamp from another manufacturer is installed instead, the owner or a competent person is responsible for safety and liability.
The owner of the equipment on site must ensure that safety precautions are taken in all cases.
Detailed information can be found in the operating manual of the diving UV-C.

Never place the UV-C on the filter band, but only in the UV-C holders provided for this purpose. The material can be damaged by UV-C radiation!

5 Maintenance and servicing

Our filters are technical installations that require regular maintenance.

A basic cleaning must be carried out once a year (or more often, if necessary directly depending on of the load). This includes above all:

- Cleaning the filter belt (see chapter 5.1)
- Cleaning or changing the fine filter (see chapter 5.3)
- Changing the sealing lip
- Check all bearings

If the water quality is polluted in particular by lime (or also by possible deposits), a verifiable, regular complete service is essential to maintain warranty claims.

This then additionally includes opening the filter belt and the conveyor belt for cleaning (descaling / cleaning) the inner set, especially the lower deflection rollers, so that the entire system is not overloaded.

This service must be carried out by your dealer or by Aquafil in order to be able to make any warranty claims. It is advisable to conclude a service contract with your contract partner.

Checklists:

Winter check (late year; after the end of the "Koi season")

- Pack the filter system frost-free (supply insulation and external heat); frost must not form in the filter area, otherwise pumps, spray pipe or filter tape may be damaged
OR:
- Make sure there is no water in the filter pan, spray pump and spray piping that can freeze.
- Switch off the system so that the belt run and spray pump can no longer be controlled.
- ATTENTION: in this case the pond pumps must also stop running, i.e. there is no more water circulation.

Spring check (BEFORE the start of the "koi season")

- See points under "Basic cleaning".
ADDITIONAL:
- Flush" supply lines (floor drains/skimmers one after the other: for this purpose, open only one supply line at a time and ensure sufficient water flow so that the dirt can be flushed out.
- Remove coarse dirt from the flushing channel

5.1 Clean filter belt

Depending on the degree of contamination, the flow rate through the filter belt may decrease after some time or the consumption of rinsing water may increase because a biofilm or lime scale is formed on the filter belt.

If a narrow strip of dirt forms on the filter belt in the direction of travel, this may be caused by a dirty belt flushing nozzle. In this case, please clean the affected nozzle (see section 5.5 Cleaning the belt flushing nozzle).

According to the manufacturer, the filter band can be injected and rinsed with the following cleaning agents. These should not get on the metal, as this could result in stains.

Here is an overview of the resistance of the polyester filter belt fabric to the following cleaning agents (manufacturer's specifications): See table next page!

Cleaning agents	**Concentration**	**Durability**
Hydrochloric acid (HCl)	5 % 16 % 20 % > 35 %	Well Optimal restricted not durable
Citric acid ($C_6H_8O_7$)	**100 %**	**Very well (our recommendation)**
Table vinegar	100 **%**	Very well
Hydrogen peroxide (H_2O_2)	3 %	Very well

Note

Massage the chosen cleaning agent into the skin, e.g. with a soft brush, and let it work for at least 15 minutes. The filter tape should be as dry as possible. The water level in the bio tub should be below the filter stage (filter band).

Pressure washer

The band can be sprayed, but without guarantee, with high pressure (max. 120 bar) and cold water from a distance of more than 30cm.

Note

Application with a high pressure cleaner is not guaranteed by the belt manufacturer. It must be carried out under your own responsibility. However, we have achieved good results in extensive tests.

5.2 Change filter belt

The filter belt only needs to be changed if it is mechanically is injured or defective due to external influences.

Note

Pull the power cord so that the belt is not transported unintentionally!
Insert the belt so that the label (3 - if present) cannot catch (5, see dotted arrow for direction of travel).

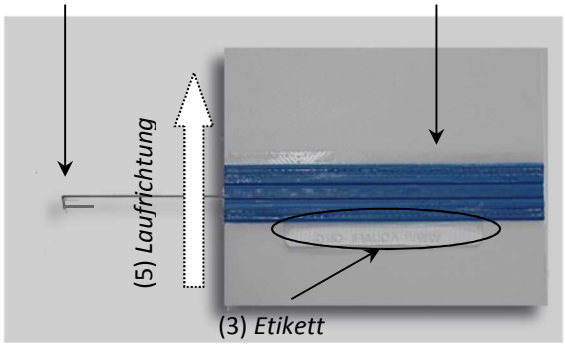
Verbundenes/zusammenhängendes Band

Position the blue quick release fastener

Feed the belt forward until the blue quick release fastener (2) reaches the side opening (1). If there is no water on the belt, it can be pulled into position by hand on the attached label (3 - if present) for more accurate alignment.

(1) *Lateral opening*

(4) *Connecting wire* (2) *Blue quick lock*



Connecting wire remove

Remove the connecting wire (4) of the belt laterally through the opening (1). (Do not pull out the tape yet)

Pull in new band

Thoroughly clean the closure and connect the quick release side of the old strap, where the label (3 - if present) is located, to the closure of the new strap (see "Connecting the strap" below). Pull the other (open) side of the old band evenly until the end of the new filter band reaches the opening (1). This "threads" the new band. Remove the connecting wire and detach the old band from the new band.

Torn band

If for some reason the tape is no longer coherent, you will have to "thread" the new tape manually.

Remove tape

Remove the filter belt that is no longer connected so that the black conveyor belt underneath is visible.

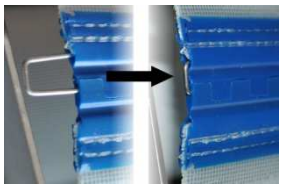
Preparation

Attach a cord or similar to the right and left of the conveyor belt (e.g. by gluing or tying it up).
Actuate the belt feed so that the cord is visible or accessible at the top again after one round.

Threading the filter belt

Attach the new or intact filter belt to the cord and pull it carefully around the conveyor belt until it comes out at the top end again. You can easily attach the cord to the inserted connecting wire, for example.

Connect band



1. 1. position the beginning and end of the band in front of the opening (1) on the side wall of the filter
2. 2. insert the connecting wire through the side opening into the strap so that the teeth of the ends interlock
3. 3. insert the angled piece of wire into the other side/eye (see picture)

5.3 Clean fine filter an pressure pump

Filter basket

The rinsing water for the filter belt is drawn from the bio-tub. The Flushing pump has a filter basket that keeps out larger dirt.

Fine filter

After the booster pump there is another fine filter which retains all particles larger than 1/10mm.
This double safety means that the spray nozzles can hardly clog up any more. The fine filter (black Y-filter) has an end cap at the end which can be unscrewed for backwashing the fine filter. After removing the cap, manually actuate the flushing process to flush and clean the fine filter. Protect yourself from splashing (e.g. by connecting it with a hose).
By unscrewing the large lid, the entire sieve can also be removed and cleaned. The fine filter should be checked approx. every 3 months.

5.4 Cleaning the level float

Special anti-limescale nozzles are used. The tape rinsing nozzles
There is a cover under the attached plexiglass in front of the filter belt.
You can check the function of the flushing nozzles by lifting the plexiglass cover slightly.

Remove flushing nozzle	Screw the blue spray nozzle carefully out of the PVC pipe.
Clean nozzle	Remove dirt deposits from the nozzle opening with a thin object (e.g. thin needle).
Insert nozzle	When inserting the nozzle make sure that you do not overtighten the thread.
Check valve	Next to the manometer there is a non-return valve, which prevents the rinsing nozzles from dripping when the water level in the biological stage is high
Alluvial nozzle Flushing channel	A further, inwardly directed nozzle ensures more efficient removal of dirt and dirty water in the dirt drain channel.

Note

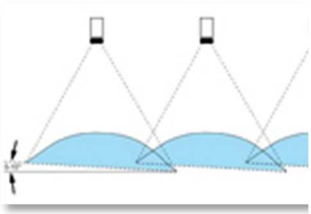
The opening of the nozzle is very sensitive and must not be damaged!
The nozzles must be positioned at a slight angle to each other so that the "fan jet" overlaps and thus covers the entire area (see picture)

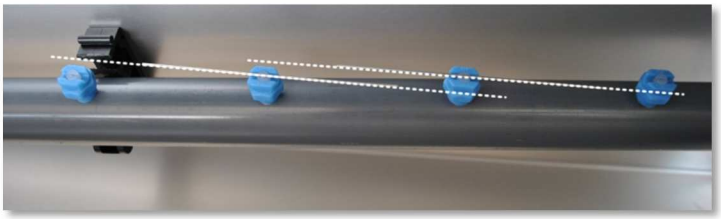
5.5 Cleaning the belt rinsing nozzle

Special anti-scale nozzles are used. The belt rinsing nozzles are located under the attached Plexiglas cover in front of the filter belt.
You can check the function of the rinsing nozzles by lifting the Plexiglas cover slightly.
slightly lifting the Plexiglas cover.

Remove flushing nozzle	Carefully unscrew the blue spray nozzle from the PVC pipe.
Clean nozzle	Clean the nozzle opening with a thin object (e.g. thin needle) to remove any dirt deposits.
Insert nozzle	When inserting the nozzle, make sure that you do not over-tighten the thread.
Check valve	Next to the pressure gauge there is a check valve, which prevents the rinsing nozzles from dripping when the water level in the biological stage is high.
Flushing nozzle Flushing channel	Another inward-facing nozzle in the dirt runoff channel ensures more efficient removal of dirt and dirty water.

Note	The opening of the nozzle is very sensitive and must not be damaged! The nozzles must be positioned at a slight angle to each other so that the "fan jet" overlaps and thus covers the entire area (see picture).





6 Exchange / Warranty

Only original spare parts from Smartpond® should be used.

In the event of improper installation, especially if the difference between the installation height of the S-filter and the water level of the pond is not observed, the manufacturer will not accept any liability for resulting damage.

For defects that occur during or after the winter season, the warranty claim cannot be asserted if the system is not sufficiently protected against temperatures below zero degrees.

The following wearing parts are excluded from the warranty:

- Filter tape
- Spray nozzles
- Fine filter element
- Diving UV-C illuminant

6.1 Further notes

Note

The customer is responsible for the safe installation of the G-versions on site.

For pump capacities above 40'000l/h, or above 15'000l/h for ECO, the installation of the overflow protection option is mandatory. Without the overflow protection installed, the warranty will be void (see section 4.2.3/S. 16).

The suction area of the pressure pump must be kept free to avoid clogging or possible supply of the pump by an air diffuser.

EBF 1200S
The level float should not be positioned lower than on delivery.

The customer is responsible for ensuring that the pond cannot be pumped empty in the event of a fault or blockage of the filter.

Smartpond® hereby draws attention to this risk and disclaims all liability in the event of damage.

7 General additions

7.1 Manufacturer informations

Smartpond GmbH
Friedrichsfehner Str. 21
26188 Edewecht

- Deutschland -

7.2 EAR Registration

In the sense of § 6 para. 1 sentence 1, § 17 para. 1 and ElekroG in connection with the notice of loan from the Federal Environment Agency dated 06.07.2005, Smartpond® filters are registered under the type of equipment listed below:

WEEE-Reg.Nr. DE 70085990

7.3 EG – Declaration of conformity

CE

Manufacturer:
Smartpond GmbH
Friedrichsfehner Str. 21
26188 Edewecht
Tel.: +49 (0)4486 930 027

Device type	Endless belt filter with transport and filter belt and internal high-pressure pump
Used guidelines	Machinery Directive 2006/42/EC Low Voltage Directive 2006/95/EC
Declaration	**Hereby the manufacturer declares the conformity of the product described here with the above mentioned safety requirements**