SMARTPOND®PROline CONTROL SYSTEM

Smartpond® ✚
WLAN

CLEAN/ RESET

FILTER BELT

PUMP ON/OFF

JET PUMP

WATER REFILL

MENU

INFO

OK

BACK

HOME

EBF SMARTPOND® FILTER-CONTROL
In cooperation with Senect - aquatic technology

www.aquafil.org

Smartpond® ✚
PROline

Table of contents

1   Read first - Preliminary information

Dear customer

Here you are holding the extended operating instructions for the PROline control unit in your hand.

The new PROline control unit can be used for the entire PROline endless belt filter generation. It can also be used as a retrofit for endless belt filters from the 2012 version onwards, as well as for nonwoven filters (SPF) when retrofitted with pressure sensors.

These operating instructions explain the basic functions for controlling the filters and individual adjustments to be able to set the filter according to the customer's wishes or for special circumstances, as well as how to integrate the control unit into an existing WLAN.

Use of this BA

Compared to the previous control units, the PROline control unit has considerable additional functions, including remote diagnosis of the filter and (limited) remote control of the filter.

Intended use
Use

Smartpond®PROline control units may only be used to control Smartpond® filters, as the programming is adapted accordingly.

Liability

The PROline control unit is NOT suitable for use in direct weather conditions. This means that the control unit must be installed away from direct sunlight / rain and frost at all times. If the system is operated outside the described area of application, the manufacturer accepts no liability whatsoever.

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

The control unit must NOT be opened. Failure to do so will immediately invalidate all warranty claims.

Safety

The PROline control unit must be operated via a separate socket outlet fitted with an RCD. Disconnect the power cable from the mains before working on the system.

1.1   Symbols and terms used

⚠️	Warning	This symbol indicates a warning which, if ignored, may result in injury. or considerable damage to property. These warnings must always be observed!

💡	Note	This symbol draws attention to important information. In case of non-observance damage to the system or faults may occur.

Control unit	The complete Smartpond®PROline control system as described in this operating manual.
Warranty	For warranty claims, it is imperative that the control unit is left in its original condition and demonstrably protected from direct weather influences (sunlight / rain), especially frost-proof installation. Any modification, adaptation, conversion, etc. of the PROline control unit will invalidate all warranty claims.
Owner of the Attachment	The person or company that has power of disposal over the system and is responsible for the operation and maintenance of the system.
Competent persons	Persons who are trained to carry out the installation and maintenance work. Persons who are aware of the potential hazards and who have the necessary tools and equipment.
Installation work	All necessary work and measures required for safe and proper commissioning of the system.
Error	An operating state that restricts or prevents safe operation of the control unit.

1.2   Responsibilities

Obligations
of the
owner

The owner of the control system must ensure that:
- it is kept in safe operating condition,
- this BA is available to competent persons,

Responsibility

Only qualified persons may carry out the following work:
- Installation
- Connecting the electrical components
- Setting the electrical components
- the entire maintenance work

Manufacturer

name	*Smartpond GmbH*
Street	*Friedrichsfehner Str. 21*
Place	*26188 Edewecht*
Country	*Germany*
Contact us at	*www.smartpond.swiss*

Local dealer /
subcontractor /
Distributor

(Company sticker)

2   Technical Data

The technical data corresponds to the model purchased. Details can be found on the corresponding website. See www.smartpond-filter.com: Click on endless belt filter and select the desired type.

2.1   Electrical supply line

The control unit is connected via a standard household socket outlet protected by an RCD.

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

⚠	Warning	RCD: When installing the electrical system, it must be ensured that the power supply is routed via a residual current circuit breaker.

3 Connection options

3.1 Inputs and outputs Plug contacts

E1   E2   E3

A11   A12   A13

The inputs of the control unit are color-coded, as are the corresponding sensor cables. The cables are connected according to the color coding and tightened with the lock nut on the plug.

Sensor flushing process E1 The sensor measures the water level in the filter and has the dual function of level sensor (trigger for flushing process) and overflow (G model) or dry run protection (S model).

Sensor Refill / 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 connecting an external warning lamp (option) Alternatively, an automatic feeder can also be connected here (if the corresponding option has been ordered)

Refill Valve A12 Output for switching the solenoid valve when the "Refill" option is ordered. The solenoid valve is used to automatically refill 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 has been inserted into the socket, it is secured with a bayonet lock.

⚠️	Attention	When connecting, make absolutely sure that the correct cables are connected with be connected to the corresponding plug-in inputs.

3.2 Outlets Sockets

The 230V sockets are intended <u>exclusively</u> for controlling the filter and must not be used for any other purpose.

The socket outlets are protected with miniature fuses (slow-blow) corresponding to the specified size. These miniature fuses are fitted above the respective socket outlet and are accessible from the outside.

| A1 | A2 | A3 |

Jet Pump	A1	This socket is used to connect the internal spray pump (standard in the delivery). scope of delivery).
UVC	A2	Output for the high-performance amalgam UVC. When purchasing the UVC package this output is used in conjunction with the filter functions (especially the switched with the UVC protective cover).
Pond Pump	A3	230 V output for the pond pump. It is essential t h a t the pond pump is connected to this socket, as the dry-running protection (S-model) and the overflow protection (G model) can be realized.

⚠️	Attention	When connecting the cables, it is essential to ensure that the correct plugs are connected to the corresponding sockets.

	Note	To be able to guarantee all safety functions, pond pump and pressure rinsing pump and, if the option is available, the immersion UV-C can be plugged directly into the control box.

4   Control elements

There is a keypad on the control unit for extended functionality and various possible adjustments:

4.1   Left keypad

The keypad for direct control of the individual functions is located on the left-hand side

Clean/Reset
This can be used to trigger a complete manual cleaning cycle. Pressing the button starts the complete cleaning cycle with the set parameters.

After a fault has occurred, the fault message is deleted by pressing the button and the filter runs in the selected operating mode again. (Provided that the cause of the fault has been rectified beforehand)

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

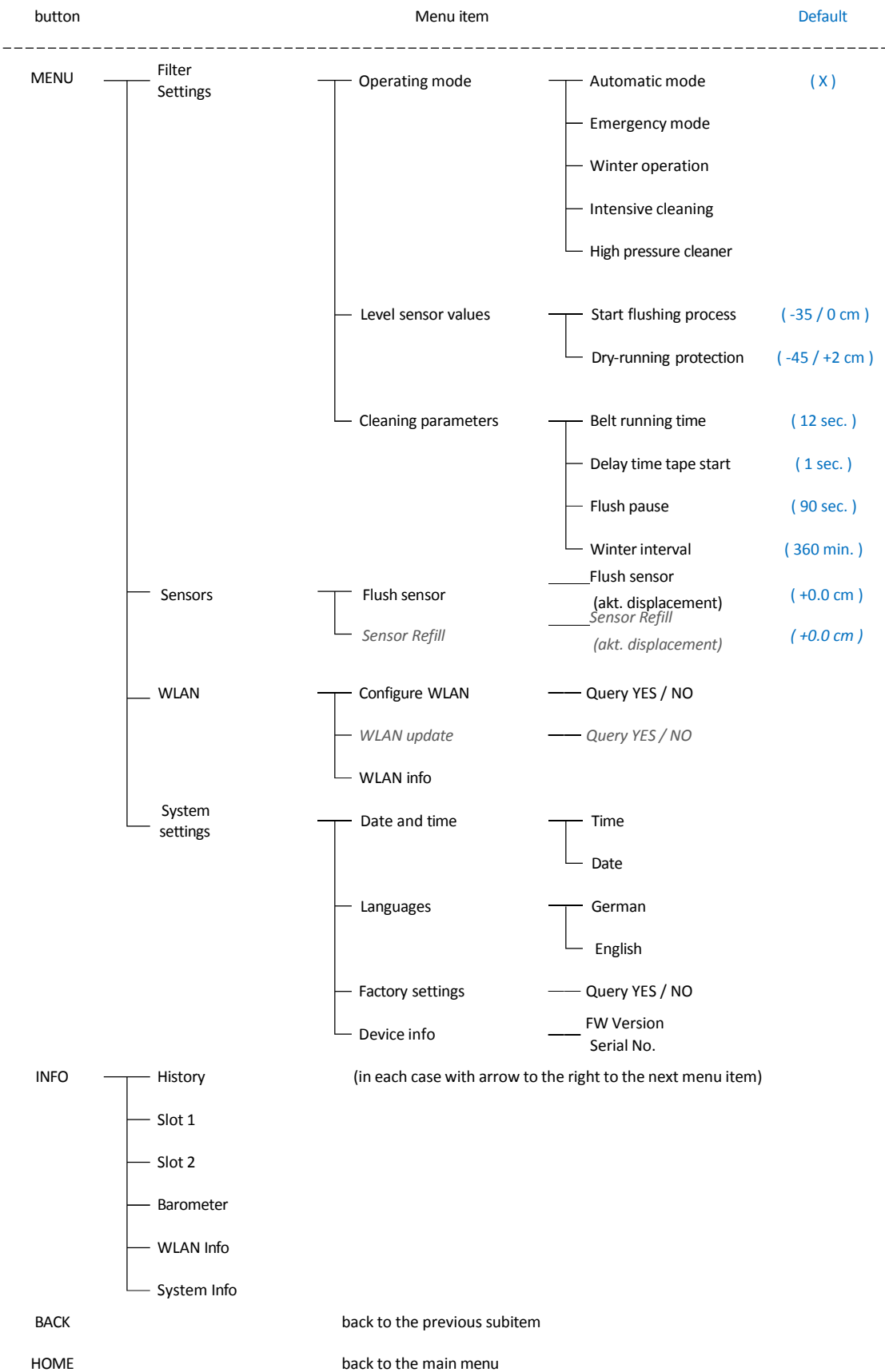| Pump ON/OFF	Press this button to switch the pond pump on and off. When the pump is switched off manually, the "P" flashes in the display.
Jet Pump	As long as this button is pressed, the pump runs to clean the filter belt (the filter belt itself does not move).
Water Refill	If the water refill option is activated (available as an option), this button takes you to the water refill submenu. If the button is pressed for longer than 3 seconds, a manual water run-on is triggered. This stops as soon as the button is no longer pressed. If the water run-on is running, it can be stopped prematurely by pressing the button (>3 sec.). A detailed description of the options for automatic refilling (including the menu structure) is described in chapter 6.6.

4.2   Right keypad

The keypad for menu navigation is located on the right-hand side. The menu navigation has been designed so that most settings can be made intuitively.

MENU	Pressing this button takes you to the menu structure of the PROline control unit.
INFO	During operation, various information about the filter can be called up by pressing this button, including the last history.
BACK	Pressing this button within the menu takes you back to the previous level.
HOME	Press this button to exit the menu level and return to the display during operation.
Arrow key	The arrow keys are used to move within the menu. They are also used to increase or decrease values.
OK BUTTON	This button is used to accept changes or values

5 Menu structure

button	Menu item	Default

MENU — Filter Settings — Operating mode — Automatic mode (X)
  — Emergency mode
  — Winter operation
  — Intensive cleaning
  — High pressure cleaner

  — Level sensor values — Start flushing process (-35 / 0 cm)
    — Dry-running protection (-45 / +2 cm)

  — Cleaning parameters — Belt running time (12 sec.)
    — Delay time tape start (1 sec.)
    — Flush pause (90 sec.)
    — Winter interval (360 min.)

— Sensors — Flush sensor (akt. displacement) (+0.0 cm)
  — *Sensor Refill* *(akt. displacement)* *(+0.0 cm)*

— WLAN — Configure WLAN — Query YES / NO
  — *WLAN update* — *Query YES / NO*
  — WLAN info

— System settings — Date and time — Time
    — Date

  — Languages — German
    — English

  — Factory settings — Query YES / NO

  — Device info — FW Version / Serial No.

INFO — History (in each case with arrow to the right to the next menu item)
  — Slot 1
  — Slot 2
  — Barometer
  — WLAN Info
  — System Info

BACK back to the previous subitem

HOME back to the main menu

General	Normal operation is described in the PROline filter operating instructions. These instructions explain the individual options of the Smartpond®PROline control system
	The PROline control unit is delivered pre-configured. The values set on delivery are listed in the last column (marked in blue)

6   Menu items

6.1   Menu button - Filter settings

6.1.1   Operating mode

The menu button takes you to the "Filter settings" submenu where you can select the desired operating mode

Automatic mode
Each filter system is supplied with a default setting in automatic mode. This means that the filter recognizes when the filter belt needs to be cleaned based on the respective degree of soiling (level sensors)

Emergency operation
In the event of a level sensor failure, the Smartpond® filter can be operated in emergency mode. In this case - regardless of the water level - the flushing times are executed via a fixed cycle (can be set via "Filter settings / Times / Winter interval"), disconnect the sensor plug from the control unit.

Winter mode
In winter mode, fixed times are set for the cleaning cycle. As less dirt accumulates in winter, the filter only cleans at very long intervals, if at all. Winter mode is suitable for maintaining a continuous cleaning interval. The flushing times are preset via "Filter settings / Times / Winter interval".

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

The process can be canceled at any time by pressing the OK button.

High-pressure cleaner
In "High pressure cleaner" mode, 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 canceled prematurely at any time by pressing the OK button; the control unit then automatically switches back to automatic mode

6.1.2   Values Level Sensor

Definition of zero line

The zero line is located 12 cm below the top edge of the filter (see corresponding sticker) and ideally corresponds to the top edge of the pond level in the S version. This zero line can be adjusted if necessary (if the filter has to be installed higher or if the water in the pond is permanently lower) (see point 6.2)

The values specified for triggering the flushing process etc. are generally always below the zero line, i.e. in the minus range.
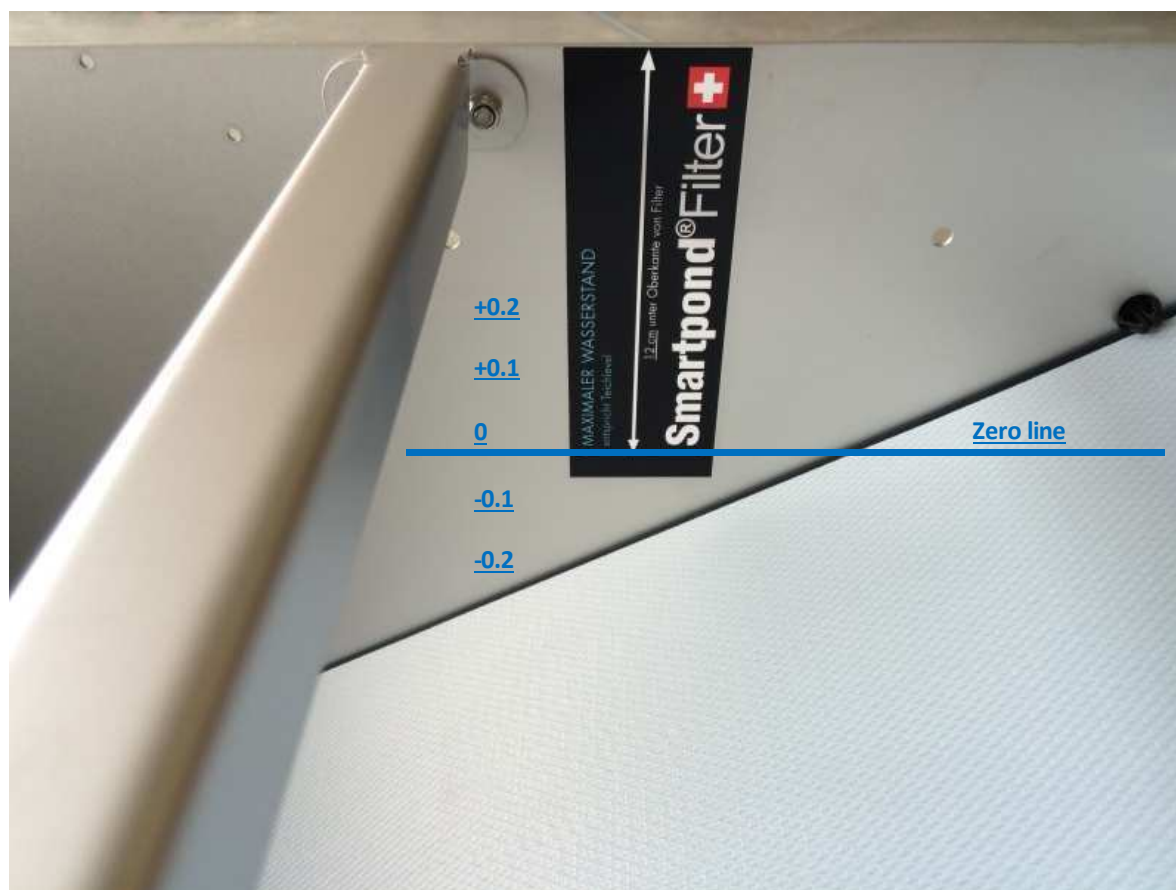
Flush sensor

The value for when the flushing process should start is stored here.

In the S version (gravity), the sensor is located in the biotub and the preset value is between -25 and -35 cm (depending on the filter size).

In the G version (pumped version), the sensor is located in the filter chamber. The value of the sensor for the G version is set between 0 and -2 cm.

Sensor dry run / overflow protection	This menu item is used to set the value at which the pond pump should switch off:

In the S version, the value serves as dry-running protection. Above this value, the pond pump should switch off so that it cannot run dry. Depending on the filter size, the value is between -38 and -45 cm.

In the G version, the value serves as overflow protection if more water is pumped into the filter than can drain out. Here, the value is between +1 and +2 cm, depending on the filter size.

6.1.3   Cleaning parameters

The cleaning parameters determine the actual cleaning cycle in automatic mode. The times that are useful for automatic cleaning are set here.

Belt running time	The belt run time is the period of time for which the belt is transported for the complete cleaning cycle. The time is set so that the dirty part of the belt is completely cleaned and no "residual dirt" can dry on (default: 12 sec.)
Delay belt start	The belt start delay is the time that elapses for the pressure pump to build up the necessary pressure for cleaning (default: 1 second).
Flush pause	Once the cleaning cycle is complete, the delay time "Rinse pause" (waiting time) starts, adjustable from 30 to 120 seconds. *Default value: 90 sec.*

A new cleaning cycle (when the level sensor is signaled) is only possible after the flushing pause has ended.

Winter interval	In "Winter mode", a cleaning cycle is carried out after the set time, regardless of the amount of dirt. This preset time for this is set to 360 min. and can be set to a value between 1 min. and 1,440 min.

6.2   Menu button - Sensors

The menu button takes you to the "Sensors" submenu. This is where you calibrate the level sensors.

The level sensors have the zero line as the default value (see section 6.1.2) as the
"Zero value". Ideally, this corresponds to the water line of the pond for the S-filter. If the filter is installed higher, or if the pond constantly carries less water, this zero line can be shifted.

This shift is carried out in this menu. Please note that a positive shift moves the theoretical zero line UP, while a negative value moves the zero line DOWN.

6.2.1   Sensor Flushing process

Sensor zero line

The current displacement of the zero line is displayed here. As a rule, the value is "0 cm". If selected accordingly, the value can be changed from +3 to -10 cm.

6.2.2   Sensor Refill

Sensor zero line

The current displacement of the zero line is displayed here. As a rule, the value is "0 cm". If selected accordingly, the value can be changed from +3 to -10 cm.

6.3   Menu button - WLAN

Use the menu button (arrow down) to access the submenu "WLAN". This involves integrating the control unit into an existing WLAN

The WLAN connection is one of the most important features of the PROline control unit. The instructions for this are described in chapter 7.

Only the button selection options are described below.

6.3.1   WLAN Configuration

Configuration mode start

To be able to assign an existing WLAN network to the control unit, the configuration mode must be set in the control unit.

When prompted, the mode must be confirmed with "YES".

6.3.2   WLAN Update

Start update

If a software update is available for the PROline control system, this sub-menu item is displayed and can be selected accordingly.

When prompted, the update must be confirmed with "YES".

	Note	**(This menu item does NOT appear in the WLAN menu if there is no current update is available).**

6.3.3   WLAN Info

The data of the connected WLAN can be read out in this menu. These are in detail:

SSID   The SSID is the WLAN name of the connected network

Signal   The signal strength of the connected network is displayed here in dBm. (The following applies here: a value around -50dBm is almost perfect, while a value above -100dBm can be considered critical.

              In this case, it should be considered whether a so-called repeater should be used to amplify the WLAN signal.

FW   Firmware version of the control modules

IP ADDRESS The IP address assigned by the WLAN router for the PROline control unit. This information is necessary for integrating the filter into the Smartpond® PROline app and can be entered accordingly.

              (For details, see chapter 7.3)

MAC ADDRESS MAC address of the filter

6.4   Menu button - System settings

6.4.1   Date and Time

Time   The current local time can be set in this menu using the arrow buttons.

Date   The date can be set in this menu using the arrow buttons.

6.4.2   Language

Menu language   The language (currently German or English) can be selected and set in this menu.

6.4.3   Factory settings

Inviting the factory positions   If, for any reason, the system needs to be completely reset to the factory settings (including all default values), this is possible in this menu.

              After the corresponding query, this must be confirmed with "YES"

              ATTENTION: Please note that this will reset all individually set values to the factory settings.

6.4.4   Devices Info

In this menu, you can read out the information of the programmed control unit.

FW version   The current firmware version is displayed here

Serial No   The programmed serial number of the filter is displayed here.

6.5   Functions Keys right Keypad

The remaining buttons for operating the system are already described in section 4.2.

Here, only the info button is important, which can be used to read out various parameters of the control unit:

6.5.1   INFO

Various filter information can be read out using the info button

History   The history of the filter shows the last actions of the filter in chronological order.

Slot 1   Display of the signal transmitter used in slot 1 (level sensor) Slot 2   Display

of the signal transmitter used in slot 2 (refill sensor, or temperature sensor)

Barometer   Display of the current air pressure values

WLAN info   Display of WLAN info (corresponds to point

6.3.3) System info   Display of device information (corresponds to

point 6.4.4)

6.6   Refill option

The Refill option described here is only active if it has also been ordered and activated accordingly. In this case, an "R" is visible in the top line of the control unit.

This option is intended for automatic refilling of the pond with fresh water and controls the "REFILL VALVE" output (A12; see point 3.3)

The WATER REFILL button (on the left keypad) takes you to the corresponding submenu

Note	**Special function: If the button is pressed for longer than 3 sec.** **refill is activated directly as long as the button is pressed.**	

6.6.1   Refill menu structure

button	Menu item	Default

WATER REFILL

- Mode
  - Deactivate
  - Car. Water supply — (X)
  - Timer table
  - Interval

- Control time
  - Start time — Set value
  - Stop time — Set value

- Car. Water supply
  - Make-up level — Set value — (-5 cm)
  - Max. duration — Set value — (2 min.)
  - Pause time — Set value — (20 min.)
  - Change zero level — Set value — (0 cm)

- Timer table
  - New entry
    - Start time
    - Duration

- Interval
  - Duration — Set value
  - Interval time — Set value

- Man. Make-up
  - Dauer der Make-up

6.6.2 Refill Function keys

Mode

Selecting "Mode" takes you to the corresponding submenu. Here you can select how the pond should be refilled. The following options are available:
- Deactivate (NO water run-on; the "R" flashes in the control unit display in this case)
- **Auto. Water supply (default setting; function see below)**
- Timer table (see below)
- Interval (see below)

Control time

In this menu, a fixed value can be set for when a water supply should be started and stopped. The control time specifies the time window when refilling is permitted (e.g. only during the day, or no refilling when the lawn sprinkler is on...). If both values are set to 0, refilling is always permitted

Auto water supply

This menu is used to set the parameters for switching the automatic water supply, such as
- Dessert level
- Max. duration (of the water run-on)
- Pause time (minimum until a new refill can become active)
- Change zero level (see also chapter 6.6.2)

The numbers highlighted in blue are the default values based on experience with which the control unit is delivered.

Timer table

In this menu, fixed times can be entered for when and how long a refill should take place (**regardless of the level of the tank**).

Several entries are possible

Interval

In this menu, you can also enter fixed times at which the **pond** should be refilled (**regardless of the pond level**):
- Entry of the duration of the refill
- Entry of the time at which a refill should take place

Man. Make-up

With Man. Refill can be selected. The time stored in this menu determines how long the valve remains open for refilling after the start of man. refill is started, the valve remains open for refilling.

Note	Manual refilling also takes place when the "WATER REFILL" button is pressed. is pressed for longer than 3 seconds. In this case, refilling continues for as long as the button is held down).

Note	The refill process can be started prematurely at any time by pressing the OK button. can be canceled, the controller then automatically switches back to auto mode

7   WLAN

The integration of the control system into an existing network is one of the main advantages of the PROline generation. This point is dealt with in detail in this chapter.

A corresponding video guide is also available on our homepage, which can be accessed at any time.

After switching on the control unit, a dot appears at the top right (to the left of the time). This means that the control unit is currently not connected to a WLAN.

In order to establish this connection to the WLAN, the following 3 points are required:

1. Establish communication between the PROline control unit and the smartphone / tablet / PC (hereinafter only referred to as "programming device")

2. Assignment of the WLAN data to the PROline control unit using the Smartpond® app (WLAN connection)

3. Enter the assigned IP address in the Smartpond® app so that the filter can be monitored and controlled from this device if necessary.

These points are described in detail in the following description

7.1   Communication between device and control unit

Configuration mode

In order to establish communication between the Smartpond® PROline control unit and the programming device, the control unit must be ready to receive as a "router". Only then can the device connect to the control unit.

To do this, use the "Menu button" (right-hand keypad) to select the "WLAN configuration" item (confirm with the "OK button") and, when asked, press the "OK" button.
Confirm "Start configuration mode" with YES (left arrow key until "YES" is highlighted and then with "OK").
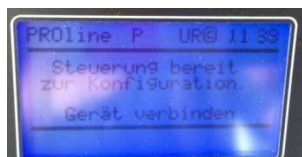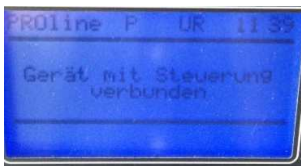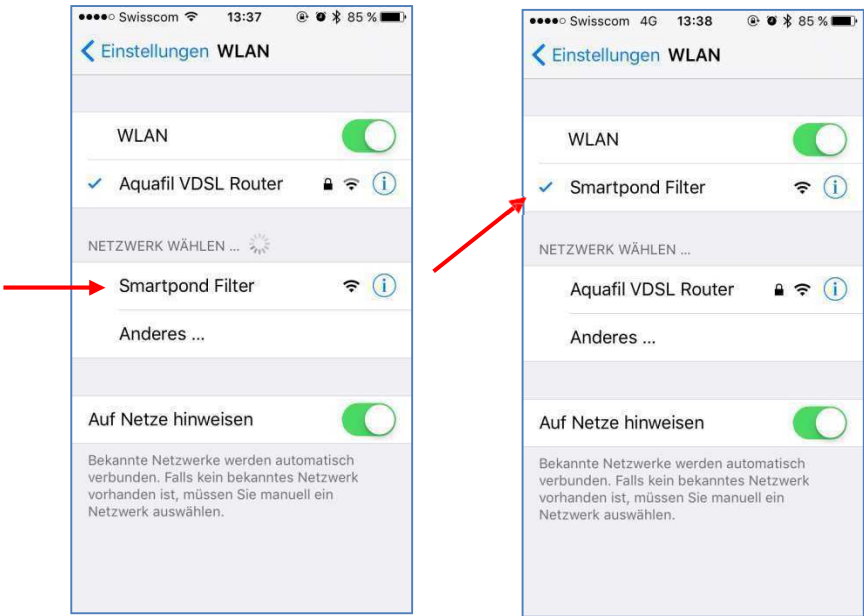
A message appears on the display of the PROline control unit indicating that it is now ready for configuration.

<table>
<tr>
<td>Selection of
PROline control unit
as router</td>
<td>In order for the programming device to be able to assign the selected WLAN to the PROline control unit, the PROline control unit must be selected as a router by the programming device (e.g. smartphone). This setting is selected in the programming device in accordance with the manufacturer's instructions.

The name of the PROline "network" is displayed as "Smartpond Filter"

In the example below, the corresponding WLAN is selected in the "Settings" menu on a smartphone</td>
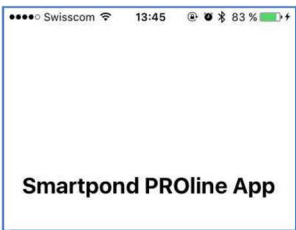</tr>
</table>

	The moment the device has connected to the PROline control unit, the corresponding message appears on the control unit display

7.2 WLAN - Assignment

Entering WLAN data	In order for the WLAN data to be entered into the PROline control unit, this data (SSID, password, authentication and DNS) must be provided by the WLAN router.

 Smartpond PROline App	The Smartpond® PROline app is required to enter the data into the PROline controller via smartphone. This can be downloaded free of charge for both IOS and Android and installed on the smartphone. **Please note that the visual representation of the following description may differ due to the constant further development of the app!**

When you open the app, you are taken directly to the main menu and select "Select WLAN" on.

This menu is used to enter the data provided by the WLAN router.

Once all the data has been entered correctly (it is essential to ensure that the spelling is correct here), the Press "Connect to Network".

If the entry is correct, the following appears on the PROline control unit display after a few seconds: "Receiving data, connect to network". If this display does NOT appear, please check the spelling and settings again (including Auth.Type and DNS/DHCP) and press "Connect to Network" again - possibly several times.
If the connection to the network is correct, the corresponding display appears ("Controller connected to network") and the WLAN symbol appears in the main menu.

Your PROline filter control unit is now connected to the WLAN.

7.3   Filter Remote control

Once the filter has been successfully connected to the WLAN, the next step is to add the specific filter to the Smartpond® PROline app overview.

To do this, press "Select filter" in the main menu (see image above) to access the adjacent menu.

After entering the IP address displayed in the control unit (see section 6.3.3, point IP), assign an individual name for the filter and press the "Add control unit" button

The applied filter appears in the overview. The green WLAN symbol indicates that this filter is connected to a WLAN and can be transferred to the main menu using the arrow button to display the corresponding information.
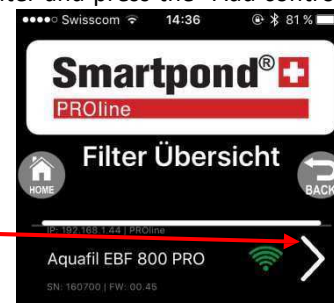
Back in the main menu, the selected filter is now displayed and the information on this active filter can be called up using the "Filter info" button (see image below left).

The selected filter is displayed in this field and shown in green if it is available.

At the same time, the filter can now also be controlled (middle image) and the history of the filter can be checked (right image)
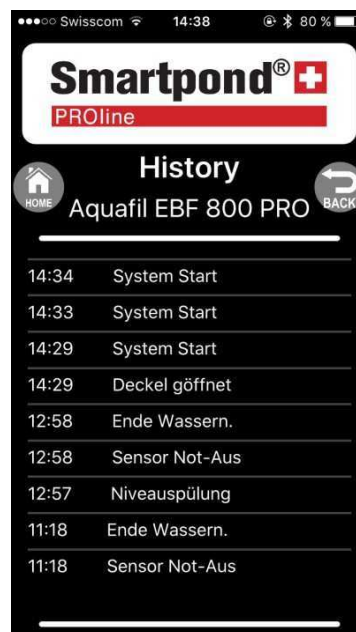
Update

The Smartpond® PROline app is constantly being further developed to provide customers with more advanced functions.

A provided update is displayed accordingly. It is possible that new features may deviate from these instructions. For this reason, these instructions do not claim to be exhaustive.

If required, updated instructions can be downloaded from the Smart Pond website.
www.smartpond.swiss OR www.smartpond.ch

8 Exchange / Warranty

Only original spare parts from Smartpond® should be used.

In the event of improper installation, in particular if the installation situation of the control unit is not observed in accordance with points 1 (Liability) and 1.1 (Warranty), the warranty claim cannot be asserted.

(Fuses and mechanical damage to the housing that occurred AFTER delivery are generally excluded from the warranty)

9 General Supplements

9.1 Manufacturer information

Smartpond GmbH
Friedrichsfehner Str. 21
D-26188 Edewecht

- Germany -

9.2 EAR Registration

Smartpond® filters are registered under the following device type in accordance with § 6 Para.1 Sentence 1, § 17 Para.1 and ElekroG in conjunction with the lending notice from the Federal Environment Agency dated 06.07.2005:

WEEE-Reg.No. DE 70085990

9.3 EC - Declaration of Conformity

Manufacturer:
Smartpond GmbH
Friedrichsfehner Str. 21
D- 26188 Edewecht
Phone: +49 (0)4486 930 00 27

Device type	Continuous belt filter with transport and filter belt and internal high pressure
filter.	

pressure pump

Directives used   Machinery Directive 2006/42/EC
                           Low Voltage Directive 2006/95/EC

Declaration   The manufacturer hereby declares that the product described here
                       conforms to the above safety requirements