

Innovations for clean water



proControl[®] 2

Control unit for
AQUAmax[®] CLASSIC / BASIC / PROFESSIONAL

Connection and operating instruction

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Dear Customer,

At this point we would like to thank you for the trust, which you have shown in us, through the purchase of this product.

Please take a few minutes and read these operating instructions closely and carefully. Only in this way is a safe and fault-free operation guaranteed!

General and safety information

The proControl® 2 control unit serves for the operation of SBR wastewater treatment plants of the AQUAmax® series.

The control unit – independent of plant type – is suitable for the connection of in each case up to two aeration units (or one aerator and one mixer), two charging, two clear water pumps, one sludge pump, one UV-disinfection plant, one system for phosphate precipitation and four float switches for level indication.

With employment in accordance with the intended use there are no hazards emanating from the equipment. National applicable regulations as well as technical data are to be observed. Should the proControl® 2 be used for other purposes without the express agreement of the firm of ATB Umwelttechnologien GmbH and/or if the following safety information is disregarded, then this can lead to malfunctions of or defects in the plant. In this case any liability is excluded. Modifications to the equipment are not permitted and lead to the loss of warranty claims.

Do not operate any equipment which shows malfunctions, has been dropped or has been damaged in any way.

Explanation of the warning notices used:



Attention!



Danger due to electrical voltage

Equipment characteristics

- Controlled by microprocessor
- Protection marking for electrical enclosures IP54
- Wall mounting
- Undervoltage failure signalling (UVS)
- 2 potential-free contacts for alarm facility
- Activation of a dosing pump for phosphate removal
- Activation of a UV-system for disinfection
- Comprehensive logbook documentation
- Simple and rapid handling by 4 softkey operation
- Times for all parameters completely pre-programmed
- Automatic run-in phase with suppression of the excess sludge removal
- Parameter settings freely selectable
- Selection of 6 menu languages (German, English, French, Spanish, Rumanian and Polish)
- Can be used for AQUAmax® BASIC, CLASSIC and PROFESSIONAL
- Ready-to-connect version for BASIC, CLASSIC und PROFESSIONAL G
- Following power failure (< 30 min) restart at the interrupted program point
- Wide range power supply 110 – 250V, 50/60Hz

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Assembly

Using the mounting material provided, secure the proControl® 2 to the cabinet brackets provided and at a suitable position, as far as possible not directly affected by weather conditions.

With temperatures below 0°C one has to reckon with a severely limited function of the LC display.

The proControl® 2 is delivered as ready-to-connect model for the variants CLASSIC, BASIC and PROFESSIONAL G. Installation wiring in situ is dispensed with!

For the PROFESSIONAL XL the control unit is wired complete, with a separate connection, to a common assembly plate. Opening of the control unit is dispensed with! An associated connection plan is provided.

All tasks, which nevertheless require the opening of the control unit as well as the electrical connection of a PROFESSIONAL XL, are to be carried out by a qualified electrician!



The pluggable relays may have loosened during transport. This must be checked before commissioning!



ATTENTION! Before opening the proControl® 2 and/or the connection box these MUST be disconnected from the mains supply. Work on open equipment may be carried out exclusively by qualified electricians! Pay attention to appropriate-phase connection (even with ready-to-connect models!



As one is concerned with an electrical plant with submersible motor pumps a separate 16 A fuse and a (separate) upstream 30 mA residual current (RCD) circuit breaker MUST be provided! Attention is to be paid to the correct laying of the protective ground wire up to the earthing of the building.



Splashproof IP 54

7-figure backlight graphic display

4 short-stroke foil keys

2 LEDs green (Operation) / red (Error)

Separate 230V terminal space includes fine fuses
8 x T6.3A, 1 x 1A with replacement fuses.

Circular plug-in connectors for PROFESSIONAL G, BASIC and CLASSIC

Yellow = buffer

Blue = aggregate SBR

Black = float switch SBR

Black = BASIC or CLASSIC

Functional description

The proControl® 2 is designed for the operation of wastewater treatment plants, which operate in accordance with the SBR process.

With this, the biological treatment process and the separation of the activated sludge from the treated wastewater take place in one and the same tank. The wastewater is treated in batches (cyclic) and we have a temporal – not spatial – separation of the individual process steps. Variations in inflow thus have no influence on the treatment performance.

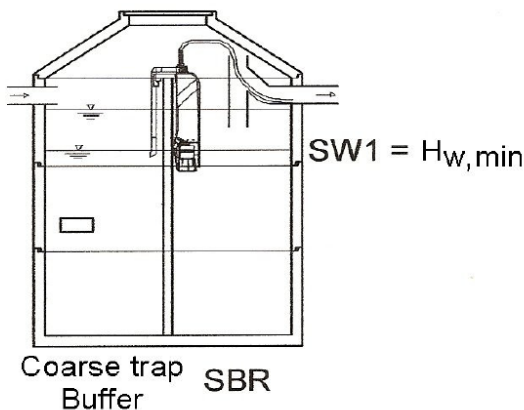
A cycle consists of

- | | |
|--|------------------------------------|
| <ol style="list-style-type: none"> 1. Charging 2. Denitrification 3. Nitrification / carbon degradation 4. Excess sludge removal (not XL) 5. Settling phase 6. Removal of clear water 7. Removal of excess sludge (XL only) 8. Run-on time | } Treatment phase (aeration phase) |
|--|------------------------------------|

With this, before the start of the settling phase, Points 1-3 (CLASSIC/BASIC: 1 + 3) would, as a rule, be carried out several times.

All times are pre-programmed for the standard application case. You just enter the total number of inhabitants and population equivalents (PT)!

Operating sequence AQUAmax® CLASSIC / BASIC



The wastewater runs through the coarse trap/sludge storage in which primary and, if required, secondary sludge is retained or stored. A part of the volume is used as buffer.

At regular intervals – following the principle of a communicating pipe and with the aid of the excess sludge pump – the impounded wastewater is fed into the activation stage. Aeration and thorough mixing using a submersible motor pump take place intermittently in the aeration phase.

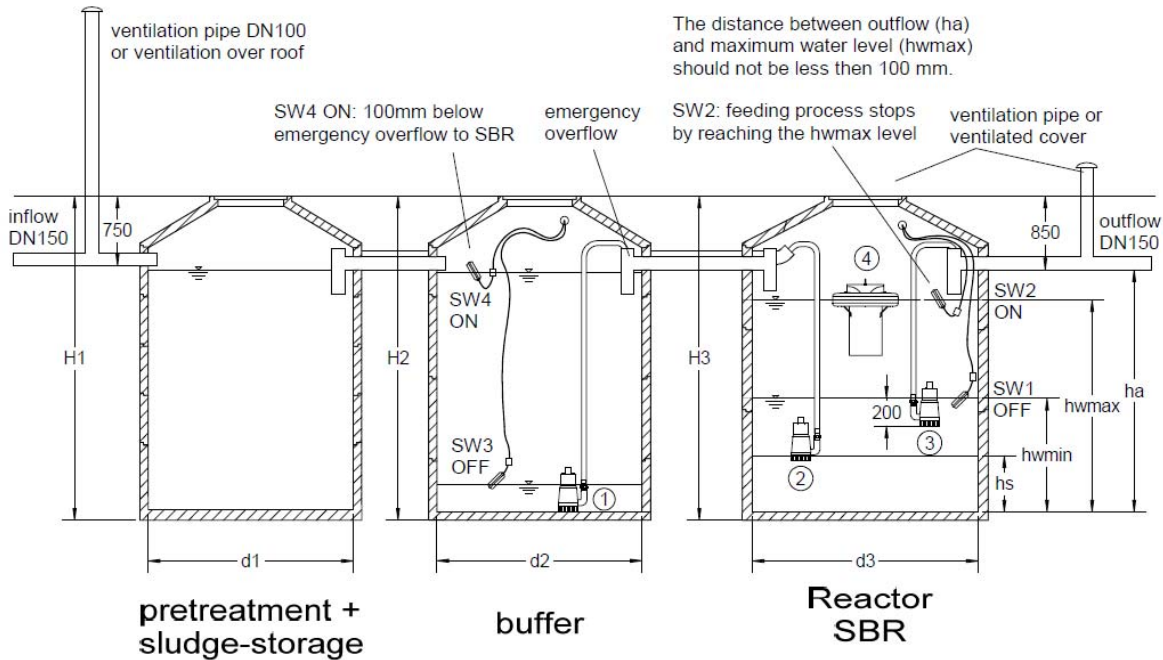
Following the aeration and settling phase the treated wastewater is pumped out using the clear water pump. The clear water removal phase ends

- a) with the opening of the float switch in the SBR tank [SW1] or
- b) after expiry of the preset maximum pumping-out time. In this case an alarm signal is emitted.

The clear water removal phase can be extended by the follow-on time (factory setting BASIC 30 sec, CLASSIC 10 sec).

The removal of excess sludge takes place during the treatment phase. This is skipped during the run-in phase (factory setting run-in phase BASIC and CLASSIC 180 days).

Operation sequence AQUAmax® PROFESSIONAL



The wastewater runs through the coarse trap/sludge storage in which primary and, if required, secondary sludge is retained or stored and ends up the buffer tank.

The cycle starts with the charging, which is part of the denitrification phase.

With a sufficient water level in the buffer tank (lower float switch in the buffer tank [SW3] closed) the wastewater is delivered into the SBR tank at regular intervals. Charging ends

- following the expiry of the preset time,
- when SW3 opens (minimum water level reached in the buffer tank) or
- the maximum water level in the SBR tank is achieved ($H_{W, max}$, upper float switch in the SBR tank [SW2] closed/ON).

After the charging, the denitrification is running until the set time expires. During the denitrification phase the SBR tank is stirred, which is done either by briefly switching ON the aerator or by the agitator (mixer).

In the following aeration phase (nitrification) oxygenation of SBR is carried out by switching on the aerator unit(s) according to the time settings. In the case of the

- PROFESSIONAL G (1-50 PT): using submerged motor aerator or optionally using the compressor and string diffuser.
- PROFESSIONAL XL (60-300 PT): using floating aerator or optionally using the compressor and string diffuser.
- PROFESSIONAL XLA (500-1000 PT): using the floating aerator
- PROFESSIONAL XLAM (400-1000 PT): using floating aerator and agitator.
- PROFESSIONAL XLn (60-300 PT / SBR line): as for PROFESSIONAL XL.

The PROFESSIONAL XLn is suitable for the multi-SBR line operation (maximum of 5 SBR lines), signals from the 2 buffer switches can be passed to all individual line controls, time offset between the lines can be preset (settings for multi-line operation must be carried out at the factory). For more information please contact us directly.

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This is followed by the settling phase and clear water evacuation phase. The clear water discharge phase ends

- a) with the opening of the lower float switch in the SBR [SW1] or
- b) after the preset max. pumping time. In this case, an alarm is emitted (CW-timeout).

The clear water removal can be extended by the CW follow-up time.

The excess sludge removal takes place in the series PROFESSIONAL G during the treatment phase and in the series PROFESSIONAL XL after the follow-up time or after the clear water evacuation.

With activated run-in phase - no sludge removal takes place (factory setting for PROFESSIONAL G 180 days and PROFESSIONAL XL 0 days).

High-water operation (only possible with 4 float switches, not valid for XLn)

If so much water runs into the sewage treatment plant that the maximum useful volume of the buffer and the SBR tank is exceeded (SW2 and SW4 are closed), the alarm message "high-water" appears and an immediate settling operation reduced to half takes place.

Economy mode

If after the last denitrification phase before settling the lower float switch in the SBR [SW1] has not floated up, the system switches to economy mode. Here, the air supply - and thus the energy consumption - is throttled (factory setting aeration time reduced to half).

Phosphate precipitation, UV irradiation, clear water discharge, follow-up time and sludge removal do not take place in the eco-mode!

A settling phase is, however, carried out in the AQUAmax® PROFESSIONAL series.

Charging continues to take place at the set intervals even in eco-mode.

The position of the float switch [SW1] is queried in each case after the end of denitrification.

The economy mode ends with the

AQUAmax® BASIC / CLASSIC: when the float switch [SW1] has floated up after a denitrification phase. A nitrification phase follows before the system goes into the settling phase.

AQUAmax® PROFESSIONAL: when the lower float switch in the buffer [SW3] has floated up at the start of the charging / denitrification phase and a charging is carried out.

Power failure

After a power failure < 30 minutes the proControl® 2 continues the program at the same point where the cycle has been interrupted.

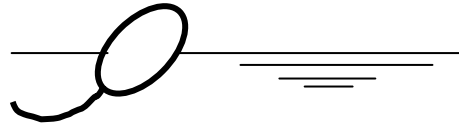
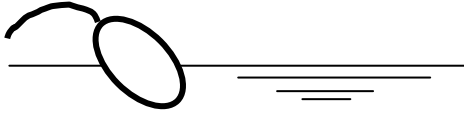
After a power failure > 30 minutes or after rebooting the control starts the cycle with the last denitrification phase (exception with the XLA cycle; here the restart begins with the central charging phase (i.e. with charging 5/10 with factory setting of 10 charges). Depending on the water level in the buffer tank [SW3] with this one charging takes place.

Flushing pulses

To keep pumps free from sludge and to have a short operation during longer downtimes, the charging, clear water, and sludge pumps are automatically switched on for the time of the flushing pulse. This takes place in the middle of the settling phase or with each feeding phase (independent of the position of the float switch [SW3]).

Float switches

Open float switch (OFF)
= 0 in the status display
(float switch has dropped)



Closed float switch (ON)
= 1 in the status display
(Float switch has floated up)



ATTENTION! Switching can be detected through a clear “click”. The switch statuses change relatively late (ca. +/- 50° related to the water level), so that a float switch that has apparently already floated can still be open and a float switch that has apparently already dropped down can still be closed.
Take note of status indicators!

AQUAswitch

With the AQUAswitch one is concerned with a reed relay switch which is integrated into the air suction line as standard with the AQUAmax® BASIC. The actual float switch is not visible from outside.

The switch status can be checked in manual operation.

General notes on operation

Operation of proControl® 2 via 4 short-stroke foil keys.



Depending on the type of plant, the displays can differ slightly from the displays in this manual.

Key functions

- ↑↓ Scroll upwards and downwards / to increase or decrease a value.
- OK Select a menu item / accept and save the input.
- ESC Jump one level back within the menu structure or jump one number back within the number input.

Commissioning

With the first initiation of the control unit basic settings and tests are carried out. By entering the plant size all important parameters are preset. However, we recommend, after commissioning to enter into "settings" and check the parameters again.

In the Service Mode you also have subsequently the opportunity to make changes.



Use the ↑↓-keys to select the desired language for the menus and display and press OK. Available are English, German, French, Spanish, Romanian or Polish.



With the input of the service code it is ensured that the commissioning is carried out by a specialist. Enter the 6 - digit code number using ↑ ↓ and OK.



Enter the data for date (display = dd.mm.yyyy) and time (display = hh:mm:ss). Warning: the date of commissioning cannot be changed later.

This is important for the correct entries in the logbook!

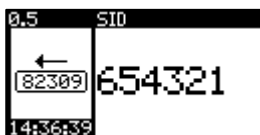


Use the ↑↓-keys to select the type of plant and confirm with OK.



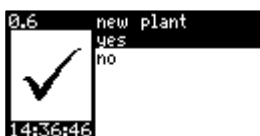
Use the ↑↓-keys to select the PT size of the plant and confirm with OK.

Important for the correct preset parameters!



Enter the serial number which is located on the AQUAmax® frame (BASIC / CLASSIC / PROFESSIONAL G) or inside the outdoor cabinet or on the mounting plate of the control (PROFESSIONAL XL). Not the serial number of the control unit!

Please make sure to enter the serial number right justified.



With the confirmation of "new plant" to suppress sludge recirculation for the duration of run-in phase (preset to 180 days for BASIC, CLASSIC and PROFESSIONAL G).



Click OK to start the test run (with ↑↓ OK and you can cancel the operation and exit the menu item). Here all active outputs are sequentially switched ON for about 5 seconds. Error messages are generated by current consumption outside the preset current limits.



Furthermore, function and allocation of the float switches will verify. Test run can be restarted by moving any float switch.



If your AQUAmax® is equipped with a float switch type **AQUAswitch®** (BASIC / CLASSIC), the float switch test can only be performed by dipping or pulling the AQUAmax® out of the water-filled tank.



In the case of wrong settings, the commissioning may finally restart by entering "no". Confirm the correct entries with „yes“ and OK.

Display information

Info



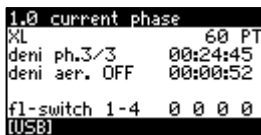
Info display indicates the type of plant, the selected PT - number, the serial number, the software version number and the current time. (here installation type XL, 60 PT, serial number 654321, software version V0.02.04)

Runtimes



With ↑ and ↓ you can change the display from Info to runtimes, to current phase and to the main menu.

Actual phase



The display "actual phase" contains information about the plant type with PT number and active treatment phase. The switching state of the float switches 1 - 4 *, the time and possible existing errors on the bottom line.

* 1 for closed float switch, 0 for opened float switch.

1. position = SW1 = SBR minimum level [$H_{W, \min}$]
2. position = SW2 = SBR maximum level [$H_{W, \max}$ / PROFESSIONAL only]
3. position = SW3 = buffer low level [PROFESSIONAL only]
4. position = SW4 = buffer high level [PROFESSIONAL XL and G optional]

Main menu



In the main menu you have the opportunity to request further information or to make changes to specific settings.

Logbook



In the logbook you will find entries for errors, runtimes, events and messages. Use the arrow keys ↑↓ to scroll to the next following or prior entry. Once the memory is full, the oldest entry is overwritten.

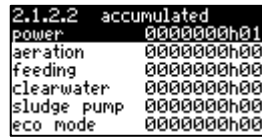
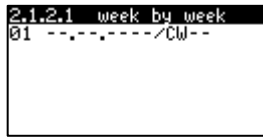
Parameter details:

Errors



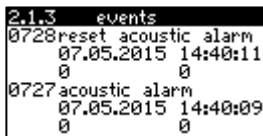
Recording the occurred error messages. For an explanation of the messages displayed, please refer to the appendix.
Example: CW timeout for exceeded runtime of the clear water pump

Runtimes



Display of the weekly or accumulated run times (cumulative).

Events



Documentation of manual interventions.
Example: acoustic alarm and subsequent manual reset of this alarm

Messages



Each change is documented in the message logbook. For example, when a float switch has switched, or when a pump switched ON or OFF.

Settings



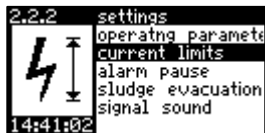
Display of the set operating parameters and the current limits .
These parameters can only be changed in the service mode.
However, you have the opportunity here to make entries for alarm pause, the sludge removal and the beep.

Operating parameters



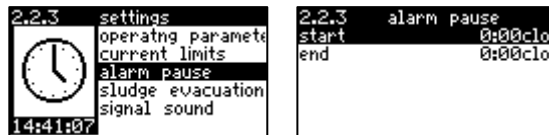
An overview of the standard parameters can be found in the appendix. Changing of the default settings is possible in "service mode" only. There you will also find a description of each parameter.

Current limits



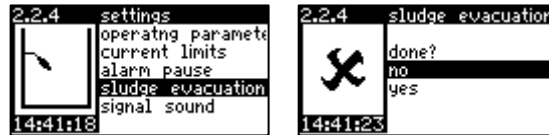
Preset current limits. A change of the default values is possible in service mode only.

Alarm pause



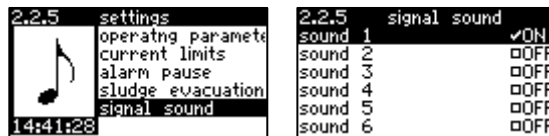
If within the selected time period any error occurs (max. 12 hours), the audible alarm signal is issued after this alarm pause time.

Sludge evacuation



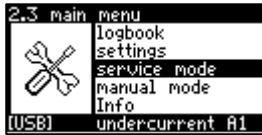
With the activation (YES and OK) the run time of the aerator will be reduced by 20% for 6 weeks (no further reduction during the winter operation). Once activated, this feature is disabled for 6 months.

Signal sound



6 different sounds of the audible alarm signal.
Alarm 6 = noiseless. Should only be selected if another alarm is present (flashing light or GSM transmission).

Service mode



In the “service mode” all relevant and necessary operating parameters for the wastewater treatment plant can be changed. Please note that incorrect settings can cause a faulty operation!



Access to the service mode via a 6 - digit code number, which is made available exclusively to authorized service specialists.



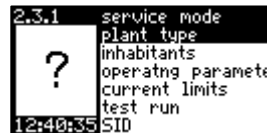
**The entries are not checked for plausibility!
In this case warranty claims are excluded by ATB Umwelttechnologien GmbH!**

The individual parameters are presented to you on the following pages. If you have questions please contact us at any time!

When exiting the service mode, the program continues at the same point, as before the entry.

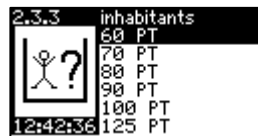
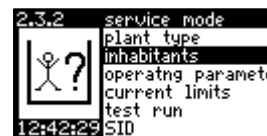
SERVICE MODE

Plant type



Select the plant type.

PT number



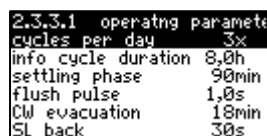
Entering the PT number will automatically load the default parameter set for this size. This means that, as a rule you need to carry out no further actions.

The pre-set parameters for the individual dimensions are given in the appendix.

Operating parameters



To enter and to change relevant parameters. The data displayed starting with „info“ emerge from the inputs and cannot be modified directly.



cycles per day

Central specification of the desired number of cleaning cycles per day. From this, the maximum cycle time results (see following line).

2.3.3.1 operating parameters	
cycles per day	3x
info cycle duration	8,0h
settling phase	90min
flush pulse	1,0s
CW evacuation	18min
SL back	30s

info cycle duration

Maximum duration of one complete treatment cycle.

This time can be shortened, for example by economy modes or shorter clear water evacuation times.

settling phase

Duration of the sedimentation time before clear water evacuation takes place.

flushing pulse

Short switch-on of the pumps for the time of the flushing pulse (see functional description)

CW evacuation

Maximum time allowed for the clear water evacuation. If the lower float switch in the SBR [SW1] does not switch from ON to OFF during this time (display: 1 → 0), an alarm message will be generated.

SL removal

Duration of the excess sludge removal.

Occurs immediately after an aeration (CLASSIC, BASIC, PROFESSIONAL G) or at the end of a cycle (PROFESSIONAL XL). Only if run in phase is 0 days.

2.3.3.15 operating parameters	
CW followup	0s
info reaction ph.	372min
feed. p. cycle	3x
feeding duration	6,0min
info feed pause	118min
additional nitri	0min

CW follow-up

For systems that are equipped with a float switch AquaSwitch® (BASIC, CLASSIC) the clear water evacuation time will be extended for this time setting after reaching the minimum water level HWmin. A new switching operation of the float by back running water after completion of the pumping is prevented..

info reaction ph.

Info duration of the treatment phase. This time is calculated from the previously entered settings.

feed. p. cycle

Number of the charges per cycle. The charging phases are divided equally between the reaction phases. With the feeding as well a denitrification phase starts.

feeding duration

Run time of the feed pump (BASIC: number of feed batches), based on a flow rate of 150 l/PT/d and a cycle duration of 8h with 3 feedings per cycle.

```
2.3.3.15 operating paramete
Old followup 0s
info reaction ph. 372min
feed. p. cyclce 3x
feeding duration 6,0min
info feed pause 118min
additional nitri 0min
```

info feed pause

Time between the end of one charging and the next charging (resp. end of reaction phase).

additional nitri

The last nitrification phase prior to settling phase may be extended by a corresponding input. **Caution: As a result the other nitrification phases and the feed pause will be shorter.**

```
2.3.3.22 operating paramete
info off-time feed. 227min
info no. Deni 3x
deniphase 25min
deni aer. ON 10s
deni aer. OFF 10min
info nitri duration 99min
```

info off-time feed.

Information about the time span between the end of the last charging and the first charging at the beginning of the next cycle.

info no. deni (not in the XLA system)

Information about the number of denitrification phases for one cycle.

deniphase (not in the XLA system)

Duration of the denitrification phase (begins with a feeding, but is independent of it).

deni aer. ON/OFF (not in the XLA/XLAM)

Setting for the intermittent agitation of the aerator during deni phase. In PROFESSIONAL XLAM the mixer is automatically in continuous operation during deniphase.

info nitri duration

Info display indicating the duration of a nitrification phase.

```
2.3.3.18 operating paramete
deniphase 45min
info nitri duration 61min
nitri aer. non-stop ✓ON
eco aer. ON 10,0min
eco aer. OFF 10,0min
info nitri mix non-st. ✓ON
nitri aer. non-stop □OFF
nitri aer. ON 10,0min
nitri aer. OFF 10,0min
eco aer. ON 10,0min
eco aer. OFF 10,0min
info nitri mix non-st. □OFF
```

nitri aer. non-stop (only PROFESSIONAL XLA/XLAM)

Deciding whether the aerator operates continuously or intermittently during the nitrification.

When nitri aer. non-stop is OFF the intermittent operation can be parameterized (factory settings: 10min ON and 10min OFF).

```
2.3.3.33 operating paramete
info nitri mix non-st. □OFF
info nitri mix ON 10,0min
info nitri mix OFF 10,0min
info eco mix ON 10,0min
info eco mix OFF 10,0min
run in phase 0d
```

With plant type XLAM the mixer is oriented to the aerator settings (aerator ON → mixer OFF, aerator OFF → mixer ON).

```
2.3.3.34 operating paramete
nitri aer. ON 7,0min
nitri aer. OFF 8,0min
eco aer. ON 3,5min
eco aer. OFF 8,0min
run in phase 0d
info P-precipit. □OFF
```

nitri aer. ON/OFF

Setting parameter for the intermittent aeration during nitrification.

2.3.3.34 operating parameter	
nitri aer. ON	7,0min
nitri aer. OFF	8,0min
eco aer. ON	3,5min
eco aer. OFF	8,0min
run in phase	0d
info P-precipit.	OFF

eco aer. ON /OFF

Setting parameter for the intermittent aeration during eco mode.

run in phase

For the displayed time no excess sludge removal is carried out. In the first weeks of treatment plant operation, the activated sludge must arise. During this period the sludge removal is not useful. Depending on the type of plant the parameter is 0 days (for XL) or 180 days for (BASIC/CLASSIC/PROFESSIONAL G).

2.3.3.36 operating parameter	
nitri aer. OFF	8,0min
eco aer. ON	3,5min
eco aer. OFF	8,0min
run in phase	0d
info P-precipit.	OFF
info disinfection	OFF

info P-precipit. / disinfection

Info display if phosphate precipitation and UV disinfection is active or not. The setting of these parameters is carried out in separate menu items.

Current limits

2.3.4 service mode	
⚡	plant type
	inhabitants
	operating parameter
	current limits
	test run
12:46:07	SID

2.3.4 current limits	
I min aer. 1	3,0A
I max aer. 1	5,8A
I min aer. 2	0,0A
I max aer. 2	5,0A
I min feed 1	2,2A
I max feed 1	5,4A

With the current limits the allowable range between minimum and maximum current is set. Current values outside of Imin - Imax lead to corresponding over- or undercurrent alarms.

If the current consumption is below the minimum value, the unit will continue to be controlled. If you carry out no error reset (only acknowledged by OK) t,he same error will not cause an error message for the next 72 hours!



If the current consumption is higher than the maximum value the control of the unit is blocked until the error reset is done (automatic reset after 72 hours).

Test run (see commissioning)

2.3.5 service mode	
👤	plant type
	inhabitants
	operating parameter
	current limits
	test run
12:47:05	SID

2.3.8 test run	
S1	current 0,0A
S2	
S3	
S4	
12:47:15	start

Note: Test run during settling phase may have the consequence that with next clear water evacuation activated sludge is pumped out.

Serial number (see commissioning)

2.3.6 service mode	
←	plant type
	inhabitants
82309	operating parameter
	current limits
	test run
12:47:36	SID

2.3.5 SID	
←	
82309	000000
12:47:59	

Alarm contact



Activation / deactivation of the potential-free contact for alarm signal.

UV-disinfection

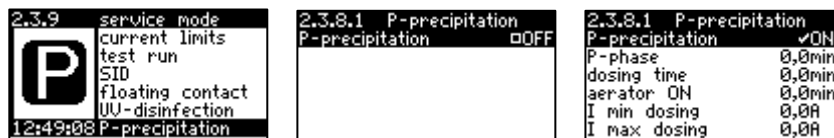


Activation / deactivation of UV disinfection. When enabled, the UV lamp is controlled in accordance with the specified warm-up time before starting the clear water pump. UV lamp is switched OFF at the end of the clear water evacuation.

Imin / Imax UV: If the current consumption of the UV reactor is beyond the current limits an alarm is generated.

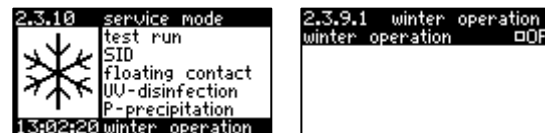
Sensor: ON/OFF possible activation of the UV sensor.

P-precipitation



Activation / deactivation of phosphate precipitation. If this is activated, a further phase (time = P - phase) is subsequently added to the final nitrification before settling phase. Time settings for duration of P-phase, dosing time, operation time of the aerator/mixer and min/max current limits are selectable.

Winter operation



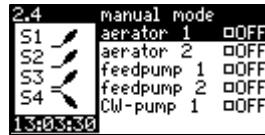
In activated winter mode, the aeration times are reduced by 20% in the months of December, January and February.

Factory settings



All parameters are reset to standard factory settings (see appendix).

Manual mode



The manual mode allows you to test all the units, the alarm contact and the float switches. The display informs you directly about the current consumption of the units and as well about the position of the float switches. The various groups of units are interlocked. Thus, for example, aerators and clear water pump(s) are not to be taken into operation at the same time.

Press *OK* button to start or stop the respective unit. With float switch ON an alarm sounds by closed float switch.

If a unit has triggered an error due to overcurrent consumption, it can be taken into operation only after resetting this error. (see troubleshooting).



The manual mode is independent of the switching status of the float switches!

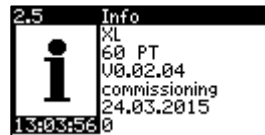
Even unused outputs can be connected.

After 10 minutes without pressing any button, an automatic reset from manual mode into automatic mode takes place.

Following the manual operation, the control continue the program at the same position where it was before entering into manual mode.

If a unit is manually switched to ON during the settling phase, the remaining time in settling phase will be set to half settling time.

Info



Shows the actual plant type, the PT number set), the software version number, the date of commissioning and the serial number (SID).

Date / time



Input / modification of date and time.

Important for correct logbook entries!

Language



Input / modification of the display language. Available are German, English, French, Spanish, Romanian or Polish.

Error reset



When during current operation an error occurs, it will be indicated visually (display) and acoustically (plus any option on the potential-free contact). By pressing the OK button you acknowledge the acoustic indication (plus the optional alarm of the potential-free contact). The error message on the display will continue and will be cancelled only after deleting the error (delete → OK).

Time of occurrence and type of the error as well as the acknowledgment will be listed in the error logbook.

If no manual error reset is performed, the recurrence of the same error does not generate an alarm.



A continuation of the same error is detected in this case only after the automatic error reset (72 hours after the error acknowledgement).

Please inform your maintenance company immediately after an error message occurs. This will take care about all necessary measures.

List of pre-programmed parameters:

AQUAmax	service mode	unit	BASIC									
operating parameters	setting range	PE	2	4	6	8	10	12	14	16		
cycles per day	1 ... 6	x	3	3	3	3	3	3	3	3	3	
info cycle duration	calculated	h	8	8	8	8	8	8	8	8	8	
settling phase	30 ... 150	min	120	120	120	120	120	120	120	120	120	
flush pulse	0,0 ... 3,0	s	0,5	0,5	0,5	0,5	0,5	0,5	0,5	0,5	0,5	
CW evacuation	0 ... 240	min	3	6	9	12	15	18	21	24		
SL back	0 ... 30	x	1	2	3	4	5	6	7	8		
CW followup	0 ... 120	s	30	30	30	30	30	30	30	30	30	
info reaction ph.	calculated	min	357	354	351	348	345	342	339	336		
feed. p. cycle	0 ... 12	x	3	3	3	3	3	3	3	3	3	
feed batches	3 ... 12	x	5	5	5	5	5	5	5	5	5	
info feed pause	calculated	min	109	108	107	106	105	104	103	102		
additional nitri	0 ... 120	min	0	0	0	0	0	0	0	0	0	
info off-time feed.	calculated	min	232	235	237	239	241	243	245	247		
info no. Deni	0 ... 12	x	3	3	3	3	3	3	3	3	3	
deniphase	0 ... 120	min	40	40	40	40	40	40	40	40	40	
deni aer. ON	0 ... 60	s	10	10	10	10	10	10	10	10	10	
deni aer. OFF	0 ... 120	min	10	10	10	10	10	10	10	10	10	
info nitri duration	calculated	min	79	78	77	76	75	74	73	72		
nitri aer. ON	0 ... 999,9	min	0,4	0,6	0,8	1,0	1,2	1,4	1,6	1,8		
nitri aer. OFF	0 ... 120,0	min	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5	
eco aer. ON	0 ... 120,0	min	0,2	0,3	0,4	0,5	0,6	0,7	0,8	0,9		
eco aer. OFF	0 ... 120,0	min	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5	
run in phase	0 ... 180	d	180	180	180	180	180	180	180	180	180	
info P-precipit.	ON/OFF		OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	
info disinfection	ON/OFF		OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	
current limits												
I min ... I max aer. 1	0 - 9,9	A	0,5...3,7									
I min ... I max aer. 2			0,0...5,0									
I min ... I max cw 1			0,5...2,0									
I min ... I max cw 2			0,0...5,0									

AQUAmax	service mode	unit	CLASSIC																					
operating parameters	setting range	PE	2	4	6	8	10	12	14	16	20	24	28	32	36	40	44	48	50	60**	75**			
cycles per day	1 ... 6	x	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	4	4		
info cycle duration	calculated	h	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	6	6		
settling phase	30 ... 150	min	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	90	90		
flush pulse	0,0 ... 3,0	s	0,2	0,2	0,2	0,2	0,2	0,2	0,2	0,2	0,2	0,2	0,2	0,2	0,2	0,2	0,2	0,2	0,2	0,2	0,2	0,2		
CW evacuation	0 ... 240	min	3	6	9	12	15	18	21	24	30	36	42	48	54	60	66	72	75	20	25			
SL-Abzug	0 ... 999	sec	1	2	3	4	5	6	7	8	10	12	13	15	17	19	21	23	24	24	24	24		
CW followup	0 ... 120	s	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	0	0		
info reaction ph.	calculated	min	357	354	351	348	345	342	339	336	330	324	318	312	306	300	294	288	285	250	245			
feed. p. cycle	0 ... 12	x	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3		
feeding duration	3 ... 30	sec	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	5	6			
info feed pause	calculated	min	109	108	107	106	105	104	103	102	100	98	96	94	92	90	88	86	85	73	72			
additional nitri	0 ... 120	min	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
info off-time feed.	calculated	min	232	234	236	238	240	242	244	246	250	254	258	262	266	270	275	279	281	184	187			
info no. Deni	0 ... 12	x	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3		
deniphase	0 ... 120	min	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	30	30			
deni aer. ON	0 ... 60	s	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10		
deni aer. OFF	0 ... 120	min	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10		
info nitri duration	calculated	min	79	78	77	76	75	74	73	72	70	68	66	64	62	60	58	56	55	53	52			
nitri aer. ON	0 ... 999,9	min	0,4	0,6	0,8	1,0	1,2	1,4	1,6	1,8	1,0	1,3	1,6	1,9	2,2	2,5	2,8	3,1	3,3	10,0	15,0			
nitri aer. OFF	0 ... 120,0	min	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5		
eco aer. ON	0 ... 120,0	min	0,2	0,3	0,4	0,5	0,6	0,7	0,8	0,9	0,5	0,7	0,8	1,0	1,1	1,3	1,4	1,6	1,7	5,0	7,5			
eco aer. OFF	0 ... 120,0	min	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5		
run in phase	0 ... 180	d	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180		
info P-precipit.	ON/OFF		OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF		
info disinfection	ON/OFF		OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF		
current limits																								
I min ... I max aer. 1	0 - 9,9	A	0,5...3,7										2,0...5,8										0,0...5,0	
I min ... I max aer. 2			0,3...0,9										0,6...2,0										0,8...2,5	
I min ... I max aer. 2			0,0...5,0																					
I min ... I max cw 1			0,0...5,0										0,6...2,0										0,8...2,5	
I min ... I max cw 2			0,5...2,0										0,6...2,0										2,2...5,4	
I min ... I max SL			0,0...5,0										0,5...2,0										2,2...5,4	

* *additional.nitri* = additional nitrification is appended to the last nitrification before settling phase. Time setting so that the whole last nitrification has a duration of one hour.

** **GZB variants: Parameters for 60 and 75 EW and current limits (all connection sizes) must be entered manually!**

Connection and operating instruction proControl® 2

AQUAmax	service mode	unit	PROFESSIONAL G																		
			2	4	6	8	10	12	14	16	20	24	28	32	36	40	44	48	50	60**	75**
operating parameters	setting range	PE	2	4	6	8	10	12	14	16	20	24	28	32	36	40	44	48	50	60**	75**
cycles per day	1 ... 6	x	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	4	4
info cycle duration	calculated	h	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	6	6	6
settling phase	30 ... 150	min	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90
flush pulse	0,0 ... 3,0	s	0,2	0,2	0,2	0,2	0,2	0,2	0,2	0,2	0,2	0,2	0,2	0,2	0,2	0,2	0,2	0,2	0,2	0,2	0,2
CW evacuation	0 ... 240	min	15	15	15	15	15	18	21	24	30	36	42	48	54	60	66	72	75	20	25
SL-Abzug	0 ... 999	sec	1	2	3	4	5	6	7	8	10	12	13	15	17	19	21	23	24	24	24
CW followup	0 ... 120	s	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	0	0
info reaction ph.	calculated	min	375	375	375	375	375	372	369	366	360	354	348	342	336	330	324	318	315	250	245
feed. p. cycle	0 ... 12	x	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
feeding duration	0,0 ... 120,0	min	0,4	0,6	0,8	1,0	1,2	1,4	1,6	1,8	2,3	2,7	3,2	3,6	4,0	4,5	4,9	5,4	5,6	5,0	6,0
info feed pause	calculated	min	125	124	124	124	124	123	121	120	118	115	113	110	108	105	103	101	99	78	76
additional nitri	0 ... 120	min	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
info off-time feed.	calculated	min	230	230	229	229	229	231	233	234	238	242	245	249	252	256	260	263	265	189	191
info no. Deni	0 ... 12	x	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
deniphase	0 ... 120	min	42	42	42	42	42	42	42	44	45	45	46	47	48	48	49	50	30	30	30
deni aer. ON	0 ... 60	s	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
deni aer. OFF	0 ... 120	min	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
info nitri duration	calculated	min	83	83	83	83	83	82	81	80	76	73	71	68	65	62	60	57	55	53	52
nitri aer. ON	0 ... 999,9	min	0,4	0,6	0,8	1,0	1,2	1,4	1,6	1,8	1,0	1,3	1,6	1,9	2,2	2,5	2,8	3,1	3,3	10,0	15,0
nitri aer. OFF	0 ... 120,0	min	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5
eco aer. ON	0 ... 120,0	min	0,2	0,3	0,4	0,5	0,6	0,7	0,8	0,9	0,5	0,7	0,8	1,0	1,1	1,3	1,4	1,6	1,7	5,0	7,5
eco aer. OFF	0 ... 120,0	min	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5
run in phase	0 ... 180	d	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180
info P-precipit.	ON/OFF		OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
info disinfection	ON/OFF		OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
current limits																					
I min ... I max aer. 1	0 - 9,9	A	0,5...3,7								2,0...5,8								0,0...5,0		
- GZB**			0,3...0,9								0,6...2,0								0,8...2,5		
I min ... I max aer. 2			0,0...5,0								0,6...2,0								0,8...2,5		
- GZB**			0,0...5,0								2,2...5,4										
I min ... I max feed 1			0,0...5,0																		
I min ... I max feed 2											0,5...2,0								2,2...5,4		
I min ... I max cw 1											0,0...5,0										
I min ... I max cw 2											0,5...2,0								2,2...5,4		

AQUAmax	service mode	unit	PROFESSIONAL XL										PROFESSIONAL XLn									
			60	70	80	90	100	125	150	200	250	300	60	70	80	90	100	125	150	200	250	300
operating parameters	setting range	PE	60	70	80	90	100	125	150	200	250	300	60	70	80	90	100	125	150	200	250	300
cycles per day	1 ... 6	x	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
info cycle duration	calculated	h	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
settling phase	30 ... 150	min	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90
flush pulse	0,0 ... 3,0	s	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0
CW evacuation	0 ... 240	min	18	21	24	27	30	37	45	60	75	90	18	21	24	27	30	37	45	60	75	90
SL-Abzug	0 ... 999	sec	30	35	40	45	50	65	90	110	140	170	30	35	40	45	50	65	90	110	140	170
CW followup	0 ... 120	s	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
info reaction ph.	calculated	min	372	368	365	362	359	352	344	328	313	297	372	368	365	362	359	352	344	328	313	297
feed. p. cycle	0 ... 12	x	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
feeding duration	0,0 ... 120,0	min	6,0	7,0	8,0	9,0	10,0	12,5	15,0	20,0	25,0	30,0	6,0	7,0	8,0	9,0	10,0	12,5	15,0	20,0	25,0	30,0
info feed pause	calculated	min	118	116	114	112	110	105	100	89	79	69	118	116	114	112	110	105	100	89	79	69
additional nitri	0 ... 120	min	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
info off-time feed.	calculated	min	226	227	228	230	231	233	236	241	247	252	226	227	228	230	231	233	236	241	247	252
info no. Deni	0 ... 12	x	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
deniphase	0 ... 120	min	25	25	25	25	25	25	30	40	50	60	25	25	25	25	25	30	40	50	60	60
deni aer. ON	0 ... 60	s	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
deni aer. OFF	0 ... 120	min	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
info nitri duration	calculated	min	99	98	97	96	95	92	85	69	54	39	99	98	97	96	95	92	85	69	54	39
nitri aer. ON	0 ... 999,9	min	7,0	8,0	9,0	10,0	11,0	12,0	8,5	11,0	12,0	13,0	7,0	8,0	9,0	10,0	11,0	12,0	8,5	11,0	12,0	13,0
nitri aer. OFF	0 ... 120,0	min	8,0	7,0	6,0	5,0	4,0	3,0	6,5	4,0	3,0	2,0	8,0	7,0	6,0	5,0	4,0	3,0	6,5	4,0	3,0	2,0
eco aer. ON	0 ... 120,0	min	3,5	4,0	4,5	5,0	5,5	6,0	3,3	5,5	6,0	6,5	3,5	4,0	4,5	5,0	5,5	6,0	3,3	5,5	6,0	6,5
eco aer. OFF	0 ... 120,0	min	8,0	7,0	6,0	5,0	4,0	3,0	6,5	4,0	3,0	2,0	8,0	7,0	6,0	5,0	4,0	3,0	6,5	4,0	3,0	2,0
run in phase	0 ... 180	d	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
info P-precipit.	ON/OFF		OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
info disinfection	ON/OFF		OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
Time Offset XLn	0,0 ... 12,0	h											4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0
current limits																						
I min ... I max aer. 1	0 - 9,9	A	3,0...5,8								3,0...5,8								3,0...5,8			
I min ... I max aer. 2			0,0...5,0								3,0...5,8								3,0...5,8			
I min ... I max feed 1			2,2...5,4																			
I min ... I max feed 2			0,0...5,0																			
I min ... I max cw 1											2,2...5,4											
I min ... I max cw 2											0,0...5,0											
I min ... I max SL											2,2...5,4											

* additional.nitri = additional nitrification is appended to the last nitrification before settling phase. Time setting so that the whole last nitrification has a duration of one hour.

** GZB variants: Parameters for 60 and 75 EW and current limits (all connection sizes) must be entered manually!

Connection and operating instruction proControl® 2

AQUAmax	service mode	unit	PRO XLA			PRO XLAM			
operating parameters	setting range	PE	500	750	1000	400	500	750	1000
cycles per day	1 ... 6	x	3	3	3	3	3	3	3
info cycle duration	calculated	h	8	8	8	8	8	8	8
settling phase	30 ... 150	min	90	90	90	90	90	90	90
flush pulse	0,0 ... 3,0	s	0,2	0,2	0,2	0,2	0,2	0,2	0,2
CW evacuation	0 ... 240	min	85	80	105	70	85	80	105
SL back	0 ... 999	sec	200	180	230	140	155	140	190
CW followup	0 ... 120	s	0	0	0	0	0	0	0
info reaction ph.	calculated	min	302	307	281	318	302	308	282
feed. p. cycle	0 ... 12	x	10	10	10	3	3	3	3
feeding duration	0,0 ... 120,0	min	8,0	8,0	10,0	22,0	27,0	26,0	34,0
info feed pause	calculated	min	18	19	13	84	74	77	60
additional nitri *	0 ... 120	min	42	41	47	0	0	0	0
info off-time feed.	calculated	min	238	233	259	246	251	249	258
info no. Deni	0 ... 12	x				3	3	3	3
deniphase	0 ... 120	min				45	45	45	40
info nitri duration	calculated	min	26	27	23	61	56	58	54
nitri aer. non-stop **	ON/OFF		ON	ON	ON	ON	ON	ON	ON
nitri aer. ON	0 ... 999,9	min	10	10	10	10	10	10	10
nitri aer. OFF	0 ... 120,0	min	10	10	10	10	10	10	10
eco aer. ON	0 ... 120,0	min	10	10	10	10	10	10	10
eco aer. OFF	0 ... 120,0	min	10	10	10	10	10	10	10
info nitri mix non-st. **	ON/OFF					ON	ON	ON	ON
info nitri mix ON	0 ... 999	min				10	10	10	10
info nitri mix OFF	0 ... 120	min				10	10	10	10
info eco mix ON	0 ... 120	min				10	10	10	10
info eco mix OFF	0 ... 120	min				10	10	10	10
run in phase	0 ... 180	d	0	0	0	0	0	0	0
info P-precipit.	ON/OFF		OFF	OFF	OFF	OFF	OFF	OFF	OFF
info disinfection	ON/OFF		OFF	OFF	OFF	OFF	OFF	OFF	OFF

mixer not-stop run during deni

parameter only visible if
nitri aer. non-stop = OFF

parameter only visible if
nitri aer. non-stop = OFF

	service mode	unit	PROFESSIONAL XLA			PROFESSIONAL XLAM			
current limits	setting range	PT	500	750	1000	400	500	750	1000
I min ... I max aer. 1	0 - 50 ***	A	3,0...7,6	4,0...10,0	5,5...13,6	5,5...13,6	7,0...17,8	10,5...26,3	14,0...35,0
I min ... I max aer. 2			0,0...5,0						
I min ... I max mix	0 - 9,9					2,0...5,0			
I min ... I max feed 1			1,0...2,5	1,7...4,3	1,7...4,3	1,0...2,5		1,7...4,3	
I min ... I max feed 2			0,0...5,0			0,0...5,0			
I min ... I max cw 1			1,0...2,5	1,7...4,3	1,7...4,3	1,0...2,5		1,7...4,3	
I min ... I max cw 2			0,0...5,0			0,0...5,0			

* *additional.nitri* = additional nitrification is appended to the last nitrification before settling phase. Time setting so that the whole last nitrification has a duration of one hour.

** *info nitri mix non-st.* follows the setting under *nitri aer. non-stop*. Factory setting of this parameter is ON and aerator and mixer are in continuous operation during the nitrification. The parameters for intermittent operation - *nitri aer. ON*, *nitri aer. OFF*, *info nitri mix. ON*, *info nitri mix OFF* - are hidden. If the parameter *nitri aer. non-stop* is changed to OFF, these prior hidden parameters are visible and thus the ON and OFF operation time for the aerator is adjustable. The mixer ON and OFF operation time is determined by the setting of the aerator. Operating mode: mixer OFF if aerator ON and mixer ON if aerator OFF.

*** The current measurement of the control is limited to a maximum of 9.9A. To display bigger currents than 10A an additional current transformer is required. The factor of this current transformer can be compensated by a software factor. Thereby currents up to 50A can be measured and displayed (only for output A1 and A2).

Possible error messages:



Attention! The acoustic and external (potential free contact) alarm will be acknowledged by pressing the OK button. The optical error message (display) is cleared only with the error reset. A deleted error is seen only in the logbook.

No alarm will be triggered by a recurrence of the same error if the error is not deleted! To ensure a safe and proper operation it is absolutely necessary to carry out an error reset in the main menu after acknowledging the error (→ delete all errors? → OK)!

The automatic error reset will be performed 72 hours after acknowledging the error. Please inform your maintenance company about the occurred error message, so that it can carry out the necessary measures.

Error messages on the display (+ acoustic alarm)

A1 = aerator 1	F2 = feeding pump 2	SL = sludge pump
A2 = aerator 2 / mixer	C1 = clear water pump 1	UV = UV-lamp
F1 = feeding pump 1	C2 = clear water pump 2	P = P-precipitation

Under current (A1/A2/F1/F2/C1/C2/SL/UV/P)

Possible causes	Troubleshooting
The unit or the entire AQUAmax® is not connected to the control unit.	Connect the unit concerned.
A terminal in the cable distribution box or on the terminal strip of the control unit is not properly tightened, so that the connection is broken.	Call service or electrician to check the contact points and the wiring.
The cable connection from the electrical device to the control is interrupted.	See above
The micro-fuse of the corresponding device has been triggered.	Change the fuse (2 slow acting 6.3A fuses inside the cover of the connection box)
The water level is so low that the pumps are running dry.	Check water level in the tanks and check the float switch function.
Current limits are not correct.	Adjust the current limits.
The corresponding unit is defective.	Call service
Air bubble in the pump (C1, C2, SL).	Call service

Over current (A1/A2/F1/F2/C1/C2/SL/UV/P)

Possible causes	Troubleshooting
Current limits are not correctly set.	Adjust the current limits.
The corresponding unit is blocked or not running smoothly.	Check the current consumption. Take out the defective device and remove the blockage.



ATTENTION! With the exceeding of the maximum current consumption the unit is locked and can only be put into operation error reset.
Rotating parts: Ensure that the system is disconnected from power supply before removing parts!

Float switch SBR / buffer

Logicerror. The upper float switch closes and the lower float switch is still open (please note the float indication on the display)

Possible causes	Troubleshooting
Float switch defective.	Call service.
Float switch is stuck.	Detect and eliminate the cause of the sticking.
A screw in the cable distribution box or on the terminal strip of the control unit is not properly tightened, so that the connection is broken.	Call service or electrician to check the contact points and the wiring.
The cable connection is broken.	See above

CW timeout

The clear water evacuation takes longer than the maximum time setting allows without lower float in the SBR [SW1] is switching OFF (please note the float indication on the display).

Possible causes	Troubleshooting
Float switch [SW1] is defective.	Call service.
Float switch [SW1] is stuck.	Detect and eliminate the cause of the sticking.
A terminal in the cable distribution box or on the terminal strip of the control unit is not properly tightened, so that the connection is interrupted.	Call service or electrician to check the contact points and the wiring.
The cable connection is broken.	See above
Insufficient performance of the clear water pump.	Check the capacity and the current consumption (manual mode). Clean the pump or change the device.
Leakage in the clear water pressure line / pressure line not properly connected to the outlet of the plant.	Change pressure line / fasten properly.
Backing-up	Eliminate the cause of back-up.
Exceptionally high sewage / infiltration water inflow.	Eliminate the cause for high sewage / seal the leakage of infiltration water.
Incorrect value for the max. pumping time.	Change the setting.

High water

The maximum usable volume in the buffer and in the SBR is achieved. Float switches SW1 to SW4 are in up position (display fl-switch 1-4 1 1 1 1).

<i>Possible causes</i>	<i>Troubleshooting</i>
Backing-up	Eliminate the cause of back-up.
Exceptionally high sewage / infiltration water inflow.	Eliminate the cause for high sewage / seal the leakage of infiltration water.
Buffer volume not correct.	Provide additional buffer volume.

Precipitant level

The level of the precipitant in the container has reached the minimum.

<i>Possible causes</i>	<i>Troubleshooting</i>
Precipitant is +expended.	Refill with precipitant.
A terminal in the cable distribution box or on the terminal strip of the control unit is not properly tightened, so that the connection is interrupted.	Call service or electrician to check the contact points and the wiring.
The cable connection is broken.	See above

UVS (Audible alarm, crossed-socket in the display)

The integrated UVS (power failure detection / Under Voltage Signaling) simplifies ensuring flawless operation. If there is a power failure > 1 sec. In the power supply of the proControl® 2 (and thus the AQUAmax®), for example, by triggering the RCD or a fuse, an audible alarm is triggered. Once activated the pulse tone continues, depending on the charge level of the battery, up to 48 hours. Acknowledge the alarm by pressing the OK button. If power returns the audible signal automatically switches OFF after ca. 10 seconds, and the control continues with the cycle. NOTE: Press and hold the OK button after a power failure for more than 3 seconds to shut down the system.

Control without function (no display)

Pre-fuse 1 A of the power device is defective. (one spare fuse inside the cover of the connection box).

Technical data:

Case dimension: (H x B x T)220x260x125 mm
Case protection class: IP54
Temperature range: 0°C ... +70°C (With the exception of batteries)
Power supply: 110...250V, 50...60Hz
Connection terminals: 4 x L (phase), 4 x N (neutral), 8 x PE (pot. earth)
Graphic display 30.5 x 59mm (64 x 128 pixel)
7 outlets each with T6.3A slow acting microfuse:
A1 – Aerator 1
A2 – Aerator 2 (mixer for XLAM)
F1 – Feeding pump 1
F2 – Feeding pump 2
C1 – Clear water pump 1
C2 – Clear water pump 2
SL – Sludge pump
UV – UV-disinfection
P – P-precipitation, dosing pump
Maximum connected load per outlet: 1,450 VA at 230V
Maximum total connected load: 3,680 VA at 230V

Inputs 12V DC, internal power supply:
4 x S1 – S4 for float switches
1 x US for UV-sensor
1 x PL for phosphate-precipitant level control
Inputs 4 ... 20 mA
2 x A+/A-, B+/B- analogue inputs 4 ... 20 mA, max. 24V

Interfaces:
CAN-Bus for networking of multiple control units
USB-Host for software update and data exchange
RS232 for remote data transmission e. g. via modem

2 x potential-free contact max. 250V AC, 5A
4 x monitoring relays (RR1...RR4) optional

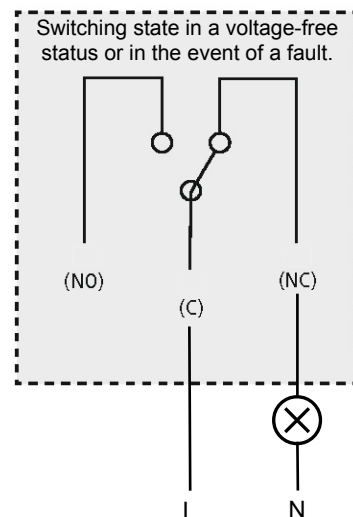
Battery recharge.: 2 x AA Mignon NiMH, 1.2 V, 2100 mAh, charge time approx. 20h
Real-time clock: Battery-buffered via 3V lithium battery
Internal signal generator 4kHz with max. 80dB in 10cm distance

Potential-free contact

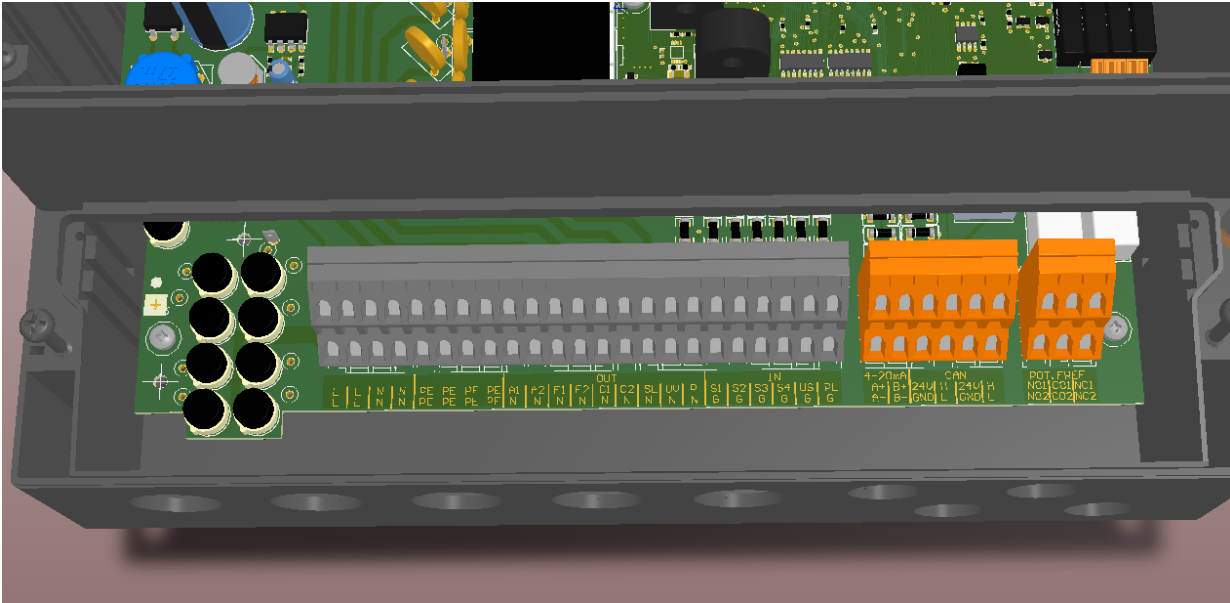
The control unit has a contact that is designed as a changeover contact, e.g. for connecting external signal transmitters. If the alarm contact is activated (= ON in Service Mode [p. 18]) and the mains voltage is connected, the change-over contact is switched to NO* in the fault-free state. In the event of a fault (also in the event of a power failure) and manually in manual mode, the contact switches to NC*.
Signal devices must therefore be connected to NC and the power supply to C/CO*.

If a separate alarm message is required in the event of a power failure, a power source independent of the power supply for the control unit is required.

*NO = Normally Open; NC = Normally Closed; C or CO = common conductor



Terminal box



Terminal configuration:

4 x L, 4 x N, 8 x PE power supply 110...250V, 50...60Hz

Outlets

A1, N / A2, N	Aerator 1 / 2 (Mixer for XLAM)	Phase / Neutral
F1, N / F2, N	Feed pump 1 / 2	Phase / Neutral
C1, N / C2, N	Clear water pump 1 / 2	Phase / Neutral
SL, N	Sludgepump	Phase / Neutral
UV, N	UV-lamp	Phase / Neutral
P, N	Precipitant dosingpump	Phase / Neutral

Inputs 12 V DC

S1 / G	Float switch SW1	Phase / Ground
S2 / G	Float switch SW2	Phase / Ground
S3 / G	Float switch SW3	Phase / Ground
S4 / G	Float switch SW4	Phase / Ground
US / G	UV-sensor	Phase / Ground
PL / G	Precipitant level control	Phase / Ground

Inputs 4-20 mA, max. 24V

A+, A- / B+, B-	Analog Inputs	Plus / Minus
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CAN-Bus for networking of multiple control units

2 x 24V, GND, H, L

Potential free contacts max. 250V AC, 5A

NO1, CO1, NC1	Alert contact 1	potential free
NO2, CO2, NC2	Alert contact 2	potential free

Assignment of microfuses T6.3A (see label in the terminal cover)

Aggregate	no.			no.	Aggregate
sludgepump (SL)	F1	●	●	F2	UV + dosingpump (UV+P)
clearwaterpump 1 (C1)	F3	●	●	F4	clearwaterpump 2 (C2)
feedpump 1 (F1)	F5	●	●	F6	feedpump 2 (F2)
aerator 1 (A1)	F7	●	●	F8	aerator 2 (A2)

EC Declaration of Conformity



The manufacturer:	ATB WATER GmbH Südstr. 2 D-32457 Porta Westfalica	
Hereby declares, that the product described below:	Control unit proControl® 2	
Fulfils the requirements of the following EC Directives:	2014/30/EU 2014/35/EU	Electromagnetic Compatibility Low Voltage Directive

Applied Harmonised Standards:

EN 61000-6-1 and -6-3	Electromagnetic Compatibility - Generic Standards
EN 61000-3-2	Electromagnetic Compatibility - Limits

Design changes, which have effects on the technical data given in the Operator's Handbook and on the use in accordance with the regulations, make this Declaration of Conformity invalid!

Porta Westfalica, 04.04.2018

Markus Baumann (Managing Director)



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