

# PUROO®



## Operation and maintenance manual

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**Dear Customer,**

At this point we would like to thank you for the trust which you have shown in us by the purchase of this product.  
Please take a few minutes to read through this operating instruction closely and carefully. Only in this way is a secure and fault-free operation ensured.

**General and safety information**

With employment in accordance with regulations there are no hazards whatsoever emanating from the equipment. Nationally applicable specifications and technical data are to be observed.

If the control unit is used for other applications without express approval of the firm ATB Umwelttechnologien GmbH and/or the following safety notices are disregarded, this can lead to malfunctions or defects in the plant. In this case any liability is excluded. Modifications to the equipment are not permitted and lead to loss of claims for warranty.

Do not operate any equipment which indicates a malfunction, has been dropped or has been damaged in any way.

Explanation of the warning notices used



Caution!



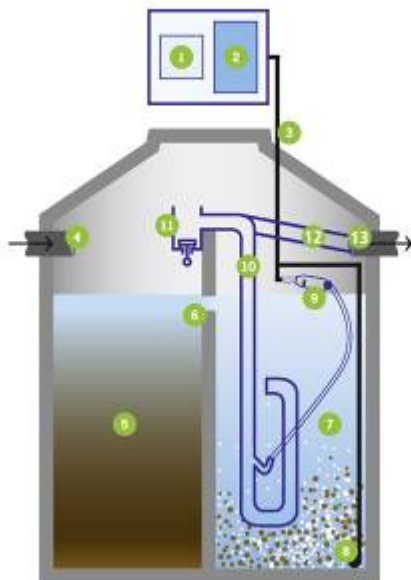
Hazard due electrical voltage

**Equipment criteria**

- Microprocessor controlled
- Voltage breakdown detection (UVS)
- Comprehensive logbook documentation
- Simple and rapid operation
- Times for all values completely pre-programmed
- Arbitrary parameter settings
- Low power consumption
- Ready for plug-in
- Potential-free contact for an additional alarm facility
- Optical and acoustic alarm signalling

## Functional description Puroo®

The PUROO® technology



1. Automatic control
2. Membrane compressor
3. Air hose
4. Inlet
5. Primary treatment
6. Inlet to treatment tank
7. SBR treatment tank
8. Tube aerator
9. Mechanical float valve
10. Compressed air elevator
11. Buffer tank
12. Clean water pipe
13. Outlet

The wastewater treatment plant functions according to the activated sludge principle in the impounding process (SBR process). With this the pollutants are taken out of the wastewater by floating micro-organisms (activated sludge) and converted into biomass.

The wastewater first reaches the coarse interceptor, which is connected with the biological stage through an opening in the dividing wall. The undissolved matter settles in the coarse interceptor before the pretreated water reaches the aeration stage through an overflow baffle. The opening in the dividing wall causes the water level in the complete plant to be set at the same level. Thus the complete surface area of the plant is used as buffer.

The cyclic treatment process of the plant is controlled by water level. With an average water consumption, 1-3 cycles per day take place. A floating valve placed in the aeration stage directs the air either to the aeration facility (membrane tube aerators are at the bottom of the tank) or to the higher located compressed air elevator.

With low water level, the aeration stage is stirred and aerated by the input air. Following appropriate water inflow the valve switches with a defined water level  $H_{Wmax}$  to the compressed air elevator for the conveyance of the water. The compressed air elevator is connected to a combination vessel (recirculation, sampling).

The switching of the valve is registered by a level switch, through which the settling phase is initiated. The first flush with the conveyance is retained by the combination vessel and is fed into the primary treatment as sludge return feed.

During the 60 minute settling phase further conveyance surges for sludge recirculation can take place depending on the system.

Following the ending of the settling phase the compressed air elevator is again cleaned through several short conveying surges using treated wastewater before the actual clean water removal is applied. With the removal of clean water, the water level is lowered to the minimum water level  $H_{wmin}$  defined via the floating valve, and the float valve is switched again to aeration. This is again registered by the level switch.

In case the minimum water level cannot be achieved within a preset time, an alarm is activated and the program changes into emergency operation in which, within ca. 1 hour, a shortened program sequence takes place.

The pretreated wastewater which is transferred to the biological stage during the clean water removal is fed into the lower area of the tank in which the sedimented activated sludge is located. There, at this point in time, treatment processes are already taking place under anoxic conditions.

Through the special arrangement of the overflow baffle a situation is achieved whereby the wastewater flowing in has no influence on the quality of the treated water in the clean water zone.

Regulation can be adjusted to the respective requirement. With commissioning the plant is set to the maximum number of connected persons. A change of this setting is not necessary with short-term over- or underloading.

If no or only so little water flows in over a period of more than 48 hours following a removal of clean water that the plant remains below the maximum water level, the plant goes into economic mode. The aeration time is reduced such that the micro-organisms have sufficient oxygen available to survive. With renewed rise of the water level to the maximum water level the plant to normal operation following removal of the clean water.

### Assembly of the atbControl®1 control unit

The control unit is already assembled prefabricated in the control cabinet for wall-mounting or in the open-air cabinet.

Only the Schuko plug has to be plugged into a prepared isolated ground receptacle (wall mounting) or the feeder connected to the designated isolated ground receptacle in the open-air cabinet.

Plug in the connector plug of the compressor and of the float switch into the appropriate sockets on the control unit.

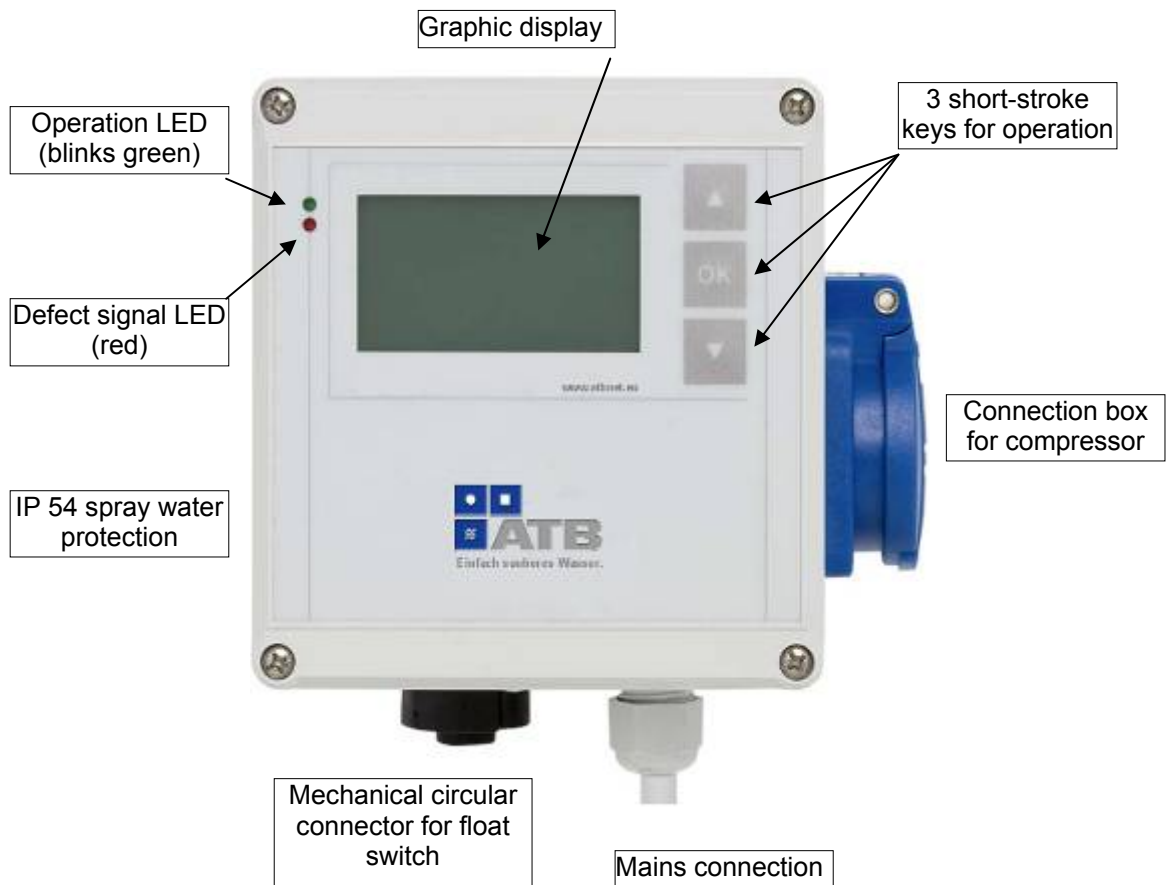


**CAUTION! Before opening the control unit this must be disconnected from the mains supply. Work on opened equipment may be carried out exclusively by qualified skilled electricians!**



**As one is concerned with electrical plant it is essential that a separate B16 fuse and a (separate) 30 mA upstream earth leakage circuit breaker (ELCB) are provided!**

Attention is to be paid to the correct laying of the protective earth conductor up to the earthing of the building.

**atbControl® 1 control unit**

**General notes on operation**

The operation of the control unit takes place via three short-stroke keys. By pressing a key the display lighting is switched on (lapses if no key is actuated within 5 minutes).

**Key functions:**

- ↑↓ Scroll up and down / menu selection
- OK Switch the cursor to the figure, which is to be changed / input value is saved / select menu point / menu setback.

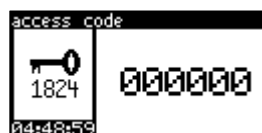
With temperatures below 0°C severely limited function of the LC displays is to be reckoned with.

## Commissioning

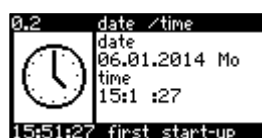
Basic settings are carried with the first commissioning. With the input of plant values all important parameters are preset. However, we recommend to check the parameters und *Settings* once again following commissioning.



Select the desired language for the menu management display using the *OK* and  $\uparrow\downarrow$  keys and confirm with *OK*. The following languages are available: German, English, French, Spanish, Polish and Dutch.



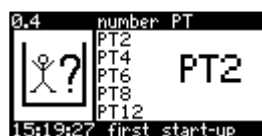
Through the input of an access code it is ensured that the commissioning is carried out by a specialist. Enter the six-figure code number using *OK* and  $\uparrow\downarrow$  and confirm with *OK*.



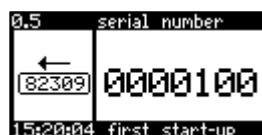
Enter the date (Indicator = DD.MM.YY) and time (Indicator = HH:MM:SS) using *OK* and  $\uparrow\downarrow$  and confirm with *OK*. Important for the correct inputs in the logbook.



Select the **PUROO®** plant type using *OK* and  $\uparrow\downarrow$  keys.



Select the plant values using *OK* and  $\uparrow\downarrow$  and confirm with *OK* | **(important for the selection of preset parameters)**! The parameters for 20 and 24 PT are to be taken from the table on Page 16 and are to be entered manually.



Using *OK* and  $\uparrow\downarrow$  enter the serial number which can be found on the **PUROO®** (not that of the control unit!) and confirm each number with *OK*. Please note that the serial number is to be entered right-aligned.



Have you made an incorrect input? Commissioning can be repeated by selecting *NO* and *OK*. If the inputs are correct confirm with *YES* and *OK*.

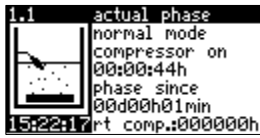


Changeover to the info indicator follows. Displayed are the selected PT number, the software version, time and serial number of the **PUROO®**.

With this the commissioning is completed and the **PUROO®** can start working. Should, in the course of time, a requirement for a modification of the settings arise then specialists have the opportunity to carry this out in the service mode.

After ca. 1 minute the info indicator changes over to the status indicator. By pressing  $\uparrow\downarrow$  you, however, have the opportunity to change back to the info indicator or to the main level

### 1.1. Status indicator (actual phase)



The status indicator informs you about the current status of the wastewater treatment plant. Indicated are the operation phase, the operational condition of the compressor, the remaining running time of the current operation phase, the elapsed time of the respective phase PUROO®.

The last line shows the current time and the total operating hours of the aerator. In the case of a fault the operating hours indicator switches with the fault report.

The pictogram in the display, once again in a graphical representation, points out the operating status (compressor ON/OFF) as well as the setting of the float switch.

### 1.2. Main menu



In the main menu, using *OK*,  $\uparrow\downarrow$  and again *OK*, you have the opportunity of accessing various sub-menus, which enable you or specialists to access further information, to amend settings or to go into manual operation.

You leave the main menu pressing  $\uparrow\downarrow$  until you reach the point 'Quit', and *OK*.

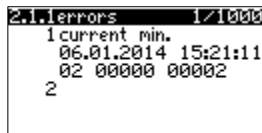
### 2.1. Logbook (Main menu)



All relevant faults, running times, events and reports are deposited in the logbook.

You access the individual pints using  $\uparrow\downarrow$  and *OK*.

#### 2.1.1. Errors (max. 1000)



Recording of error messages which have occurred. For an explanation of the messages shown please refer to the appendix.

#### 2.1.2. Runtimes



You have the opportunity of displaying certain runtimes in a weekly summary as well as over the complete operating time.

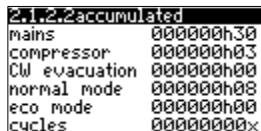
##### 2.1.2.1. Week-by-week



Indicated are the total operation time (mains), the running time of the compressor, the time in economic operation as well as the times of normal operation and of the clean water removal.

Change between calendar weeks using  $\uparrow\downarrow$  and quit the weekly summary with *OK*.

##### 2.1.2.2. Accumulated



The total running times are displayed. Return using *OK*.



### 2.1.3. Occurrences (max. 1000)

```

2.1.3 occurrence 30/1000
30 reset acoustic alarm
06.01.2014 15:22:03
2 0
31 -
    
```

Documentation of manual interventions (e.g. modification of running times).  
Return using **OK**.

### 2.1.4. Scheduled maintenance

```

2.1.4 maintenance 0/254
000: 00.00.2000 00:00:00
001: 30.05.2012 08:10:35
002: 00.00.2000 00:00:00
003: 00.00.2000 00:00:00
004: 00.00.2000 00:00:00
    
```

Indication of the scheduled maintenance carried out and entered in the service mode.

## 2.3. Settings (Main menu)

Indication of the parameters set. A modification is possible in the service mode only. Change between individual windows using  $\uparrow\downarrow$ .

### 2.3.1.1. Basic settings

```

2.3.1.1 basic settings
aeration 2/ 5 min
5L impulse 5x/ 2 s
CW evacuation 60 min
start eco 2 d
15:39:27
    
```

Indication of the aeration interval (operation/pause) in normal, number and duration of the filling surges for the excess sludge removal, maximum time for removal of clean water as well as the period of time which must elapse in order to change into economic operation.

### 2.3.1.2 Advanced settings

```

2.3.1.2 advanced settings
float. contact disabled
I min/max 0,2/ 1,3 A
deni duration 60 min
sediment. ph. 60 min
15:44:44
    
```

Indication of the setting of the potential-free contact, the current limits, the duration denitrification and settling phase.

### 2.3.1.3 Advanced settings

```

2.3.1.3 advanced settings
aeration h.p.m. 1 h
factor 300%
red. aeration 6 h
factor 60%
17:37:26
    
```

Following the denitrification, a phase opposite to the normal phase increased aeration can be adjusted (in this case for a time 3 times the length), and the reduction after a timing (in this case 60% after 6 hours).

## 2.3. Service mode (Main level)

```

2.3 service mode
settings
type of plant
number PT
serial number
factory settings
15:48:36 escape
    
```

```

access code
1824 000000
04:48:59
    
```

The service mode is reserved exclusively for the qualified maintenance personnel and is accessible only after input of the 6-figure code number.

Relevant parameters of the wastewater treatment plant operation are stored and can be modified in the service mode.



**Inputs are not checked for plausibility. Our service department would be very happy to provide you with support. ATB Umwelttechnologien GmbH reject warranty claims of any kind for the results of incorrect inputs!**

## Settings (Service mode)

Possibility for modification of preset parameters. You change between individual setting windows using  $\uparrow\downarrow$ . You access a setting window with **OK**. Select the parameter using  $\uparrow\downarrow$  and **OK**. Setting of the individual values using  $\uparrow\downarrow$ . Change of p and/or confirmation of values using **OK**. Quit with  $\uparrow\downarrow$  up to point "quit".

### 2.3.1.1. Service info

```

2.3.1.1 service info
maintenance      no
done              no
run in           200
cycles           200
signal. HW Level enabled
17:30:27
    
```

The service fitter has the possibility of noting an implemented scheduled servicing (notice in logbook, s.p. 9), the number of cycles in which, following an initial commissioning, no sludge return feed is to take place (run-in phase) and De-/Activation of high water alarm.

### 2.3.1.2. Basic settings

```

2.3.1.2 basic settings
aeration         2/ 5 min
SL impulse       5x/ 2 s
CW evacuation    60 min
start eco        2 d
15:48:32
    
```

Possibility for modification of aeration interval (operation/pause) in normal operation, number and duration of flushing surges, maximum duration of removal for clean water as well as the period of time which must pass without removal of clean water in order to change into economic mode.

### 2.3.1.3. Advanced settings

```

2.3.1.3 advanced settings
float. contact disabled
I min/max        0,2/ 1,3 A
deni duration    60 min
sediment. ph.    60 min
15:49:06
    
```

De-/activation of the potential-free contact, determination of the current limits above and below which an alarm is activated, length of time of the denitrification and settling phases.



**If the power consumption is below the minimum level the unit continues to be controlled. If you carry out no error reset this is no longer shown for max. 72 hours with renewed occurrence of the same error.**

If the power consumption is above the maximum value the unit is not again activated until an error reset has taken place (automatic reset after 72 hours).

### 2.3.1.4. Advanced settings

```

2.3.1.4 advanced settings
aeration h.p.m.  1 h
factor           300%
red. aeration    6 h
factor           60%
17:34:18
    
```

Following the denitrification, a phase opposite to the normal phase increased aeration can be adjusted (in this case for a time 3 times the length), and the reduction after a timing (in this case 60% after 6 hours).

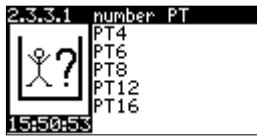
## 2.3.2.1. Type of plant (Service mode)

```

2.3.2.1 type of plant
Puroo
Apuris
15:50:13 first start-up
    
```

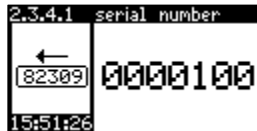
Choice the plant type PUROO®.

### 2.3.3.1. PT number (Service mode)



Possibility for amendment of the PT figure (up to 16 PT). All parameters are adjusted automatically. As a rule, you need to carry out no further measures in the menu point *Settings*.

### 2.3.4.1. Serial number (Service mode)



Possibility for amendment of the serial number. (Takes place from right to left.)

### 2.3.6.1. Factory settings (Service mode)



The pre-programmed parameter set for the selected PT figure is loaded. (2x OK or ↑↓ to quit).

## 2.4. Manual mode (Main menu)



Here you have the possibility of testing the compressor and the potential-free contact in manual operation.

The current status of the float switch and the current power consumption are displayed.

After 15 minutes an automatic return from manual to automatic operation.

### 2.5.1. Info (Main menu)



Displayed are the selected PT figure, the software version, date of the production of the software, serial number and commissioning as well as the current time.

### 2.6. Date/time (Main menu)



Possibility of adjustment of date (display = DD.MM.YY) and time (display = HH:MM:SS)

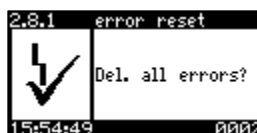
Important for the correct entries in the logbook.

### 2.7.1. Language (Main menu)



Select the desired language for menu management and display using the OK and ↑↓ keys and confirm with OK. Available are German, English, French, Spanish, Polish and Dutch.

### 2.8.1. Error reset (Main menu)



An error message in the display is first deleted following an error reset (i.e. after pressing OK).

Point in time and type of error as well as the acknowledgement are subsequently still be found in the logbook only (errors / events).



If you carry out no error reset this is no longer shown for max. 72 hours with renewed occurrence of the same error!

Only after an automatic reset after 72 hours (flooding 24 hours) is there an indication, if necessary, of a continuity of the error.

With a flooding alarm there is also an automatic reset following a drop of the float switch.

## APPENDIX

### Connection board



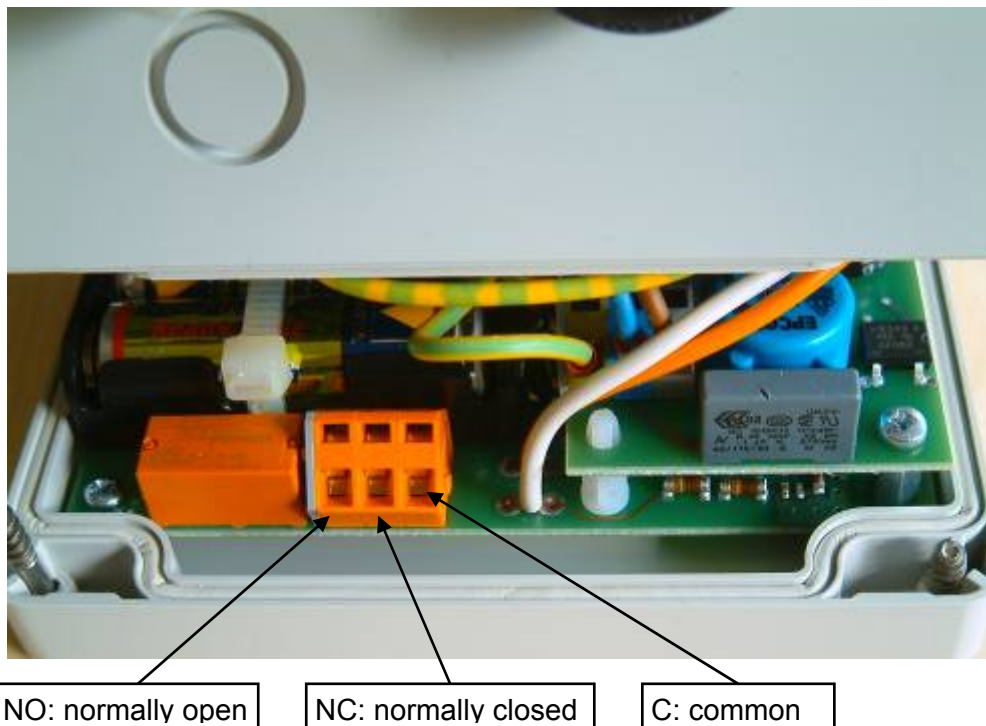
Control unit fuse  
TR5; T0,5A

Microfuses for compressor TR5; T3,15A  
(Spare fuse at bottom of casing)

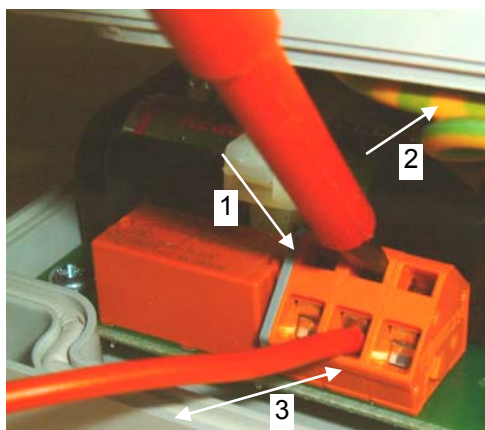


**CAUTION!** Before opening the control unit this must be disconnected from the mains supply. Work on opened equipment may be carried out exclusively by qualified skilled electricians!

## Potential-free contact



Please connect a separate signalling to the C and NC contacts.  
For activation of the contacts please refer to *Settings/ Alarm Relay* in the *Service mode*.



### Screwless-type clamp connection:

1. Insert screwdriver in the upper slot and
2. bend it up slightly. Through this the clamp connection is opened and it is possible to
3. insert or remove the lead

### Technical data:

Casing: IP54, 140x150x90 mm  
 Temperature range: 0°C ... +50°C  
 Operating voltage: 185...255V, 50...60Hz  
 Power consumption: < 5 VA  
 Maximum connected rating of the output: 720 VA  
 Potential-free contact: 230 V~ / 5 A / 1.250 VA | 30V- / 5 A  
 Accumulator: 2xNiMH, 1.2V, Type AA, 1,800 mAh; life: 1000 load/discharge cycles  
     with trickle charge: min. 6 years |<sub>25°</sub>  
     with trickle charge: min. 3 years |<sub>45°</sub>

**Error messages:**


If an error occurs in on-going operation this is indicated optically (display / red LED) and acoustically (+ if required, a device on the potential-free contact). By pressing the *OK* key you acknowledge the acoustic message (+ if required, a device on the potential-free contact). An error message continues to occur alternatively with the compressor running time and is deleted only after an error reset (i.e. after pressing *OK*).



**If you carry out no error reset this is no longer shown for max. 72 hours with renewed occurrence of the same error!**

**Only after an automatic reset after 72 hours (flooding 24 hours) is there an indication, if necessary, of a continuity of the error.**

With a flooding alarm there is also an automatic reset following a drop of the float switch.



Please inform your maintenance firm immediately following an error message. They will initiate all necessary measures.

**Following error messages are possible:**

- **Current min.**

<i>Possible cause</i>	<i>Rectification</i>
False limiting value set.	Correct value (0.2 A).
Measurement of current incorrect.	Check value of current in manual operation, call Service.
Overload switch activated.	Check membranes/voltage/back pressure, reset switch.
The compressor is not connected to the control system.	Connect compressor to the control system.
A screw terminal in the control unit is not tightened correctly so that the connection is interrupted.	Call Service or have the contact points and wiring checked by an electrician.
The microfuse has activated.	Change the fuse (T 3,15 A).
The compressor is defective.	Call Service.

- **Current max.**

<i>Possible cause</i>	<i>Rectification</i>
False limiting value set.	Correct value (1.3 A).
Measurement of current incorrect.	Check value of current in manual operation, call Service.
Winding burnt through.	Call Service.
Membrane block blocked.	Call Service.

- **Input 24 V**

<i>Possible cause</i>	<i>Rectification</i>
Check of the switched float inputs negative.	Call Service.

- **Flooding**

<b>Possible cause</b>	<b>Rectification</b>
Float switch defective	Call Service
Float switch not moving freely	Determine cause and ensure free movement
Mechanical circular connector not correctly connected.	Ensure correct connection
Backing-up	Remove cause of backing-up.
High wastewater / infiltration water inflow	If necessary, seal tank or rectify other causes.
False value for period of flooding	Correct value

- **Float??**

<b>Possible cause</b>	<b>Rectification</b>
<i>Electric float switch also with operation pause switched</i>	
Unusually high wastewater / infiltration water inflow	If necessary, seal tank or rectify other causes.
Backing-up.	Remove cause of backing-up.
Float switch defective.	Exchange float switch.
Compressor has no aeration performance.	Call Service, if necessary exchange compressor.
Hose connection leaking.	Check connections, seal.

### Control system without function (no display)

<b>Possible cause</b>	<b>Rectification</b>
Mains input fuse defective.	Exchange fuse (T 500 mA).

### UVS

#### *Acoustic alarm, no display or stylised indication of a crossed Schuko plug socket*

The integrated UVS (Under Voltage Signalling) simplifies the assurance of correct operation. Should a power failure occur in the supply line, e.g. through the activation of the earth leakage circuit breaker (ELCB) or a fuse, an acoustic alarm is initiated. Once activated the impulse tone, depending on the charge condition of the accumulator, continues for up to 24 hours. You acknowledge the alarm by pressing the OK key (signal tone) for ca. 3 secs. If the voltage is re-established the signal deactivates automatically.

**Establishment of the pre-programmed PUROO® parameters:**

Pt	Aeration	Pause norm	Start econ. phase	Sludge return feed		
	(1-15) [min]	(2-15) [min]	(0-9) [d]	(0-5) [sec]	Pause (1-4) [min]	Surges (0-9) [Number]
2	2	8	2	1	1	5
4	2	5		2		
6	3	6		3		
8	3	5		3		
12	5	5		3		
16	6	5		3		

PT	Settling phase	Clean water removal	Duration deni. phase	Current Min.	Current Max.	Energy requirement
	(60-120) [min]	(60-120) [min]	(0-120) [min]	(0-1.5) [A]	(0.0-3.0) [A]	[kWh/J]
2	60	60	60	0.2	1.3	140
4						172
6						224
8						250
12						329
16						424

Setting of the control system takes place according to the above details. The tables are saved in the control unit, a manual input of the individual values is not necessary and at these points serves only as control (exceptions see\*).



## Notes on scheduled maintenance

With scheduled maintenance the tasks and inspections have to be carried out by service personnel at large time intervals. Number of and requirements on the scheduled maintenance are specified by the lower water authorities in which, in this connection, the biological effectiveness is at the forefront.

The plant is equipped with a UVS. As a rule a twice-a-year scheduled maintenance is sufficient. The examination of the treated wastewater with regard to the various parameters is also specified by the lower water authorities. The samples to be taken for this are drawn from the upper area of the separator using a suction pump, which is connected to the factory-installed sampling hose. In the case that there is a distributor shaft or similar behind the plant representative samples can also be taken from there.

A suction pump is not included within the scope of delivery of the plant, it can, however, be obtained directly from ATB.

### We recommend that, at least the following tasks are undertaken

- Inspection of the operating logbook and reading of the operating hours counter with determination of regular operation of the plant (target-performance comparison)
- Functional check and scheduled maintenance of the compressor in accordance with the manufacturer's specifications
- Functional check of the overhead ventilation
- Measurement and adjustment of optimum operating values e.g. oxygen supply (~2mg/l),  
Sludge volume (100-300ml/l)
- Determination of the height of the sludge level and, if necessary, arrangement of sludge removal
- Execution of general cleaning tasks (e.g. flushing of the clean water pipe via the emergency overflow opening, removal of foreign bodies or possible floating sludge from the separator)
- Flushing of the possibly existing irrigation via the emergency overflow opening
- Check of the structural condition of the plant (e.g. corrosion, ventilation, accessibility)
- Record in the operating logbook the scheduled maintenance carried out

Examination of a grab sample from the discharge	<ul style="list-style-type: none"> <li>- Temperature</li> <li>- pH value</li> </ul>	<ul style="list-style-type: none"> <li>- Settleable solids</li> <li>- COD</li> </ul>
Examinations in the Aeration tank	<ul style="list-style-type: none"> <li>- Oxygen concentration</li> </ul>	<ul style="list-style-type: none"> <li>- Share of sludge volume</li> </ul>

The findings and the tasks carried out must be documented in a scheduled maintenance report. This is sent with the results of the water samples to the operator of the wastewater treatment plant for safe-keeping. The responsible water authority can demand a view of the operating logbook and the scheduled maintenance reports. Lower water authorities often require the sending, by the operator or maintenance firm, of the scheduled maintenance reports following each maintenance period.

## Operator' self-monitoring

As operator of the wastewater treatment you have a responsibility to the water authority to ensure a trouble-free operation of the plant. Operation faults in biological small wastewater treatment plants, in nearly all cases, are reflected in the quality of the discharge of the treated water. These must therefore be promptly identified and rectified either by you or by a qualified maintenance firm.

In order to document the self-monitoring you are obliged to record this in the operations diary. The water authority can demand access to this operations diary.

In detail for this you are required to carry out the following checks regularly:

### **Daily:**

- Function of the control unit and check for unusual indications.

### **Weekly:**

- Visual check of the aeration for mixing and input of air bubbles.
- Visual check of water level. No sludge may overflow uncontrolled into the aeration chamber.

### **Monthly:**

- Visual check of the discharging water for clarity.
- Transfer of operating hours from the display into the operating diary.
- Visual check of the inlet and outlet for blockages.
- Determination of possible presence of floating sludge and, if required, removal of the floating sludge (into the sludge storage).

## **If you observe the following recommendations you can save unnecessary repair costs and increase the service life of the components of your plant:**

- The plant must remain permanently switched on even if you are on holiday.
- Infiltration water such as rain water, groundwater, swimming pool and aquarium water may not be discharged.
- With domestic cleaners please ensure that these indicate no acid or alkaline reactions.
- The aeration openings as well as inlet and outlet openings must always be free. The plant cover must be capable of being opened.
- Ensure that the plant is maintained regularly by a specialist firm. For the implementation of scheduled maintenance tasks instruct firms whose staff are certified as specialists and have been trained by ATB.
- Only the primary treatment stage has to be regularly (ca. every 12 months) desludged by a disposal company! Desludging can take place, also as required following consultation with the responsible water authorities and conclusion of a maintenance contract.

## Notes on disposal

You should, in your own interest, observe the following disposal notes:

<b>Solid or liquid substances which do not belong in the sink or in the toilet</b>	<b>What they cause</b>	<b>Where they are well taken care of</b>
Adhesive plaster	Blocks pipes	Dustbins, garbage cans
Ashes	Do not decompose	Dustbins, garbage cans
Birdcage sand	Blocks wastewater treatment plants	Dustbins, garbage cans
Cat litter	Blocks pipes	Dustbins, garbage cans
Chemicals	Poison wastewater	Collection points
Cigarette butts	Lodge in wastewater treatment plants	Dustbins, garbage cans
Cleaning agents (not general)	Can poison wastewater	Collection points
Condoms	Blockages	Dustbins, garbage cans
Corks	Lodge in wastewater treatment plants	Dustbins, garbage cans
Cottonwool sticks	Block wastewater treatment plants	Dustbins, garbage cans
Deep frying fats	Form deposits in pipes and lead to blockages	Dustbins, garbage cans
Disinfectants	Kill bacteria	Do not use
Drain cleaners	Poison wastewater, corrode pipes	Do not use
Edible oils	Block wastewater treatment plants	Dustbins, garbage cans /collection points
Food scraps	Block wastewater treatment plants	Dustbins, garbage cans
Lacquer, varnish	Poison wastewater	Collection points
Medicines	Poison wastewater	Collection points, chemists
Motor oil	Poisons wastewater	Petrol stations, workshops
Nappies, diapers	Block wastewater treatment plants	Dustbins, garbage cans
Paintbrush cleaner	Poisons wastewater	Collection points
Paints	Poison wastewater	Collection points
Pesticides	Poison wastewater	Collection points
Photographic chemicals	Poison wastewater	Collection points
Plant protectants	Poison wastewater	Collection points
Razor blades	Block wastewater treatment plants and case injury	Dustbins, garbage cans
Sanitary towels tampons, liners	Block wastewater treatment plants	Dustbins, garbage cans
Textiles (e.g. nylons, cleaning cloths, handkerchiefs etc.)	Block wastewater treatment plants	Old clothes collection, dustbins, garbage cans
Thinners (Paint)	Poison wastewater	Collection points
Wallpaper glues	Block wastewater treatment plants	Collection points
Wastes containing oil (oil filters, clothes etc.)	Poison wastewater	Collection points
WC stones	Poison wastewater	Do not use



**Operations diary – Operator' self-monitoring**

Date	Operating time Aeration [h]	Extraordinary incidents: e.g. power failure, faults, sludge removal...

### Operations diary – Operator' self-monitoring

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**Operations diary – Operator' self-monitoring**

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**ATB Umwelttechnologien GmbH**  
**Südstraße 2**  
**D-32457 Porta Westfalica**

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EN 12566-3

Small wastewater treatment plants for up to 50 PT

PUROO®

Material Fibre concrete

Effectiveness of the treatment:

Efficiency of the treatment performance (with a certified organic daily pollutant load $BOD_5 = 0.37$ kg/d and a daily inflow of $0.9$ m <sup>3</sup> /d)	COD	95.1 %
	$BOD_5$	97.9 %
	SS	97.1 %
	$NH_4-N^*$	98.6 %
	$N_{tot}$	NPD

Treatment capacity (dimensioning):

Nominal organic daily pollutant load ( $BOD_5$ )	0.36	kg $BOD_5$ /d
Nominal daily inflow ( $Q_N$ )	0.9	m <sup>3</sup> /d

Watertightness Passed

Stability under load Passed

Durability Passed

\*Temperature in the bioreactor  $\geq 12^\circ C$

This document does **NOT** apply for retrofits and only in combination with the following Declaration of Conformity!



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**EN 12566-3**

**Small wastewater treatment plants for up to 50 PT**

**PUROO®**

Material concrete

Effectiveness of the treatment:

Efficiency of the treatment performance (with a certified organic daily pollutant load $BOD_5 = 0.25 \text{ kg/d}$ and a daily inflow of $0.6 \text{ m}^3/\text{d}$ )	COD	93.8 %
	$BOD_5$	96.6 %
	SS	96.1 %
	$NH_4-N^*$	94.0 %
	$N_{tot}$	NPD

Treatment capacity (dimensioning):

Nominal organic daily pollutant load ( $BOD_5$ )	0.24	kg $BOD_5/\text{d}$
Nominal daily inflow ( $Q_N$ )	0.6	$\text{m}^3/\text{d}$

Watertightness Passed

Stability under load Passed

Durability Passed

\*Temperature in the bioreactor  $\geq 12^\circ\text{C}$

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**EN 12566-3**

**Small wastewater treatment plants for up to 50 PT**

**PUROO®**

Material PP (type G)

Effectiveness of the treatment:

Efficiency of the treatment performance (with a certified organic daily pollutant load BOD <sub>5</sub> = 0.3 kg/d and a daily inflow of 0.75 m <sup>3</sup> /d)	COD	93.4 %
	BOD <sub>5</sub>	96.5 %
	SS	96.1 %
	NH <sub>4</sub> -N*	91.0 %
	N <sub>tot</sub>	NPD

Treatment capacity (dimensioning):

Nominal organic daily pollutant load (BOD <sub>5</sub> )	0.3	kg BOD <sub>5</sub> /d
Nominal daily inflow (Q <sub>N</sub> )	0.75	m <sup>3</sup> /d

Watertightness Passed

Stability under load Passed

Durability Passed

\*Temperature in the bioreactor ≥ 12°C

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**EN 12566-3**

**Small wastewater treatment plants for up to 50 PT**

**PUROO®**

Material PE (type A)

Effectiveness of the treatment:

Efficiency of the treatment performance (with a certified organic daily pollutant load BOD <sub>5</sub> = 0.3 kg/d and a daily inflow of 0.75 m <sup>3</sup> /d)	COD	93.4 %
	BOD <sub>5</sub>	96.5 %
	SS	96.1 %
	NH <sub>4</sub> -N*	91.0 %
	N <sub>tot</sub>	NPD

Treatment capacity (dimensioning):

Nominal organic daily pollutant load (BOD <sub>5</sub> )	0.3	kg BOD <sub>5</sub> /d
Nominal daily inflow (Q <sub>N</sub> )	0.75	m <sup>3</sup> /d

Watertightness Passed

Stability under load Passed

Durability Passed

\*Temperature in the bioreactor ≥ 12°C

This document does **NOT** apply for retrofits and only in combination with the following Declaration of Conformity!

## Declaration of EC-conformity

The manufacturer:	<b>ATB Umwelttechnologien GmbH</b> <b>Südstr. 2</b> <b>D-32457 Porta Westfalica</b>	
declares herewith, that the following specified product:	<b>PUROO®</b>	
implements the requests of following EC-Directives:  plus EU-edict	2006/42/EG 2004/108/EG  2006/95/EG  305/2011	Directive on machinery Directive to electromagnetic compatibility Directive to electrical equipment designed for use within certain voltage limits Construction products Regulation <sup>1)</sup>

<sup>1)</sup>Only with new plants as well as in connection with tanks in accordance with National General Technical Approval and proven initial testing. No retrofitting.

**Modifications in the construction, which have consequences to technical specifications and the handling in according to regulations, cancel this declaration of conformity!**



Porta Westfalica, 05.06.2013

Markus Baumann (Managing Director)