Level controller
BADU®BNR 300

Installation and operating instructions



Read carefully before installation, commissioning and operation

Inhalt

page

A.1. EC declaration of conformity 3
A.2. General instructions 3
A.3. Explanation of symbols 3
A.4. Changes to the unit 4
A.5. Warranty and liability 4

B.1. Specifications 5
B.3. About the controller 6
B.4. Scope of supply 6
B.5. Disposal and pollutants 6
B.6. Hydraulic variants 7

C.1. Wall installation 8
C.2. Electrical connection 9
C.3. Installing the water detectors 10

D. Terminal connection diagram 11

E.1. Display and input 12
E.2. Commissioning help 13
E.3. Free commissioning 13
E.4. Menu sequence and menu structure 14

1. Measurements 15

2. Statistics 16
2.1. Operating hours 16
2.2. Water metering 16
2.3. Shutdowns 16
2.4. Graphic overview 16
2.5. Message log 16
2.6. Reset/clear 16

3. Operating mode 17
3.1. Automatic 17
3.2. Manual 17
3.3. Off 17

4. Settings 18
4.1. Regulation 18
4.2. Regulation mode 18
4.3. Additional relay 18
4.3.1. Additional relay 18
4.3.2. Safety mode 18
4.3.3. Impulse on-time 18
4.3.4. Impulse off-time 19
4.3.5. Unit of dry run protection 19
4.3.4. Dry run protection 19
4.4. Unit 19
4.5. Switch-on delay 19
4.6. -- 19
4.7. Unit 19
4.8. Switch-off delay 19
4.9. -- 19
4.10. Water metering 19
4.11. Filling 20
4.12. Signal switch 1 20
4.13. Signal switch 2 20
4.14. Signal switch 3 20

5. Protective functions 21
5.1. Safety shutdown 21
5.2. Mode water detector 1 21
5.3. Sensitivity water detector 1 21
5.4. Mode water detector 2 21
5.5. Sensitivity water detector 2 22
5.6. Mode water detector 3 22
5.7. Sensitivity water detector 3 22
5.8. Limit for filling 22
5.9. Seizing protection 22

6. Special functions 23
6.1. Program selection 23
6.2. Commissioning 23
6.3. Factory settings 23
6.4. Time and date 24
6.5. Daylight saving time 24
6.6. Eco mode 24

7. Menu lock 24

8. Service values 25

9. Language 25

Z.1. Malfunctions with error messages 26
Z.2. Replacing the fuse 27
Z.3. Maintenance 27

Safety instructions

A.1. EC declaration of conformity

By affixing the CE mark to the unit the manufacturer declares that the BADU®BNR 300 conforms to the EC low voltage directive 2006/95/EC and the EC electromagnetic compatibility directive 2004/108/EC.
Conformity has been verified and the corresponding documentation and the EC declaration of conformity are kept on file by the manufacturer.

A.2. General instructions

These installation and operating instructions contain basic instructions and important information regarding safety, installation, commissioning, maintenance and the optimal use of the unit. Therefore these instructions must be read completely and understood by the installation technician/specialist and by the system user before installation, commissioning and operation of the unit.
This device is an automatic, electronic temperature controller for swimming pools and similar uses. Only install the controller in a dry room and under ambient conditions listed in “B.1. Specifications” on page 5.
The valid accident prevention regulations, the applicable standards and regulations and the installation and operating instructions of the additional system components must also be observed.
The controller does not under any circumstances replace any safety devices which are to be provided by the customer!
Installation, electrical connection, commissioning and maintenance of the unit may only be carried out by specialists who have the appropriate training.
For the user: Make sure that the specialist gives you detailed information on the function and operation of the controller. Always keep these instructions in the vicinity of the controller.
Despite various safety shutdown systems, a sufficiently dimensioned floor drain is also necessary.

A.3. Explanation of symbols



Failure to observe these instructions can result in danger to life from electric voltage.



Failure to observe these instructions can result in serious damage to health such as scalding or even life-threatening injuries.



Failure to observe these instructions can result in destruction of the unit or the system or damage to the environment.



Information which is especially important for the function and optimal use of the unit and the system.

A.4. Changes to the unit



Changes to the unit can compromise the safety and function of the unit or the entire system.

- Changes, additions to or conversion of the unit are not permitted without written authorisation from the manufacturer
- It is likewise forbidden to install additional components that have not been tested together with the unit
- If it becomes clear that safe operation of the unit is no longer possible, for example because of damage to the housing, turn the controller off immediately
- Any parts of the unit or accessories that are not in perfect condition must be replaced immediately
- Use only original spare parts and accessories from the manufacturer
- Markings made on the unit at the factory must not be altered, removed or made illegible
- Only the settings described in these instructions may be used on the controller

A.5. Warranty and liability

The controller has been manufactured and tested with regard to high quality and safety requirements. The unit is subject to the statutory guarantee period of two years from the date of sale. The warranty and liability shall not include, however, any injury to persons or material damage that is attributable to one or more of the following causes:

- Failure to observe these installation and operating instructions
- Improper installation, commissioning, maintenance and operation
- Improper repairs
- Unauthorised structural changes to the unit
- Installation of additional components that have not been tested together with the unit
- Any damage resulting from continued use of the unit despite an obvious fault
- Failure to use original spare parts and accessories
- Use of the device for anything other than its intended purpose
- Operation above or below the limit values listed in the specifications
- Force majeure

Description of controller

B.1. Specifications

Electrical specifications:

Mains voltage	230 VAC +/-10 %
Mains frequency	50 - 60 Hz
Power consumption	1.5 W - 2.3 W
Internal fuse	2 A slow blow 250 V
Protection category	IP 40/IP 44 (only with the supplied gasket set)
Protection class	II
Overvoltage category	II
Degree of pollution category	II

mechanical relay 460W maximum AC3	R1
potential free Relay maximum 12A AC3	R3
sensor input	4

Permissible cable length of sensors and appliances:

Sensors	< 30 m
Mechanichal relay	< 10 m

Real Time Clock RTC with 24 hour power reserve

Permissible ambient conditions:

Ambient temperature	
for controller operation	0 °C - 40 °C
for transport/storage	0 °C - 60 °C
Air humidity	
for controller operation	max. 85 % rel. humidity at 25 °C
for transport/storage	no moisture condensation permitted

Other specifications and dimensions

Housing design	2 part, ABS plastic
Installation methods	Wall installation, optional panel
Overall dimensions	163 mm x 110 mm x 52 mm
Cut out installation dimensions	157 mm x 106 mm x 31 mm
Display	Fully graphical display, 128 x 64 dots
Light diode	Multicolour red/green
Operation	4 entry keys

Description of controller

B.3. About the controller

The BADU®BNR 300 level controller enables an automatic level control for your swimming pool. The device is impressive most of all for its functionality and simple, almost self-explanatory operation. For each step in the input process the individual entry keys are assigned to appropriate functions and explained. The controller menu contains headwords for the measured values and settings as well as help texts or clearly-structured graphics.
The BADU®BNR 300 can be used as a solar controller for the various system variants illustrated and explained under “B.6. Hydraulic variants” on page 7.

Important characteristics of the BADU®BNR 300:
- Depiction of graphics and texts in an illuminated display
- Simple viewing of the current measurements
- Analysis and monitoring of the system by means of statistical graphics, etc.
- Extensive menu settings with explanations
- Menu lock activation to prevent unintentional setting changes
- Resetting to factory settings

B.4. Scope of supply

- BADU®BNR 300 level controller
- 3 pcs. 3.5 x 35 mm screws and 3 pcs. 6 mm plugs for wall installation
- 6 strain relief clips with 12 screws, replacement fuse 1x T 2 A/250 V
- BADU®BNR 300 installation and operating instructions

Optionally contained depending on design/order:
- Level switch (2716090005)

Additionally available:
- Water detector (2716605007), overvoltage protection
- Optical/acoustic external signal (2716605006)

B.5. Disposal and pollutants

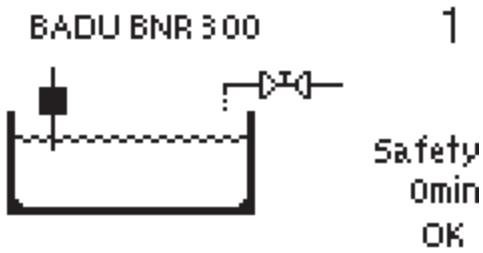
The unit conforms to the European RoHS directive 2011/65/EU for the restriction of the use of certain hazardous substances in electronic equipment.



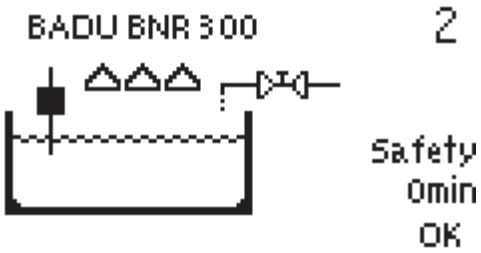
The unit must not under any circumstances be disposed of with ordinary household refuse. Dispose of the unit only at appropriate collection points.

B.6. Hydraulic variants

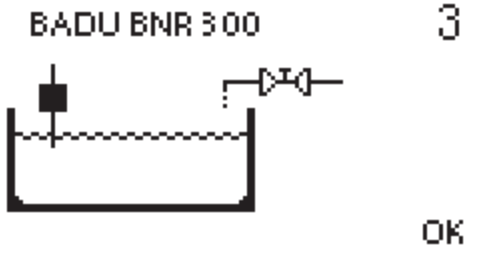
The following illustrations should be viewed only as schematic diagrams showing the respective hydraulic systems and do not claim to be complete. The controller does not replace safety devices under any circumstances. Depending on the specific application, additional system components and safety components may be required, such as check valves, non-return valves, safety temperature limiters, scalding protectors etc. and must therefore be provided.



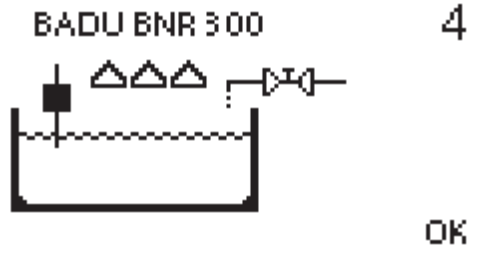
Programme 1
Level controller with safety shutdown



Programme 2
Level controller with safety shutdown and 3 water detector sensors



Programme 3
Level controller



Programme 4
Level controller with 3 water detector sensors



Programme 5
Level controller with safety shutdown and water detector sensors
The water level between the highest two level switches will be maintained. The lowest level switch serves as protection against dry running.

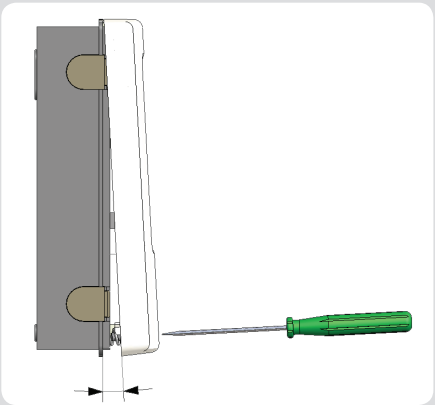


Programme 6
Level controller with water detector sensor
The water level between the highest two level switches will be maintained. The lowest level switch serves as protection against dry running.

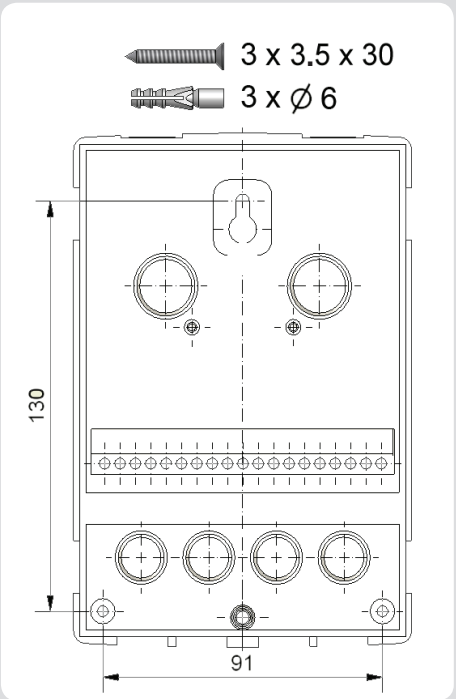
C.1. Wall installation

Install the controller in dry areas only and under the ambient conditions described under “B.1. Specifications”. Follow the instructions below:

C.1.1 .



C.1.2.



1. Unscrew cover completely

2. Carefully pull upper part of housing from lower part. Terminal clamps are released during this process.

3. Set upper part of housing aside, being sure not to touch the electrics when doing so.

4. Hold the lower part of the housing up to the selected position and mark the 3 mounting holes. Make sure that the wall surface is as even as possible so that the housing does not become distorted when it is screwed on.

5. Using a drill and size 6 bit, drill 3 holes at the points marked on the wall and push in the dowels.

6. Insert the upper screw and screw it in slightly.

7. Fit the upper part of the housing and insert the other two screws.

8. Align the housing and tighten the three screws.

C.2. Electrical connection



Before working on the unit, switch off the power supply and secure it from being switched on again! Check for the absence of power!
Electrical connections may only be made by a specialist and in compliance with the applicable regulations.
Do not use the controller if the housing shows visible damage, for example cracks.



Low-voltage cables such as temperature sensor cables must be routed separately from the mains voltage cables. Feed temperature sensor cables into the left-hand side of the unit only and mains voltage cables into the right-hand side only.



The customer must provide an all-pole disconnecting device in the power supply of the controller e.g. a heating emergency switch.



The cables being connected to the unit must not be stripped by more than 55 mm and the cable jacket must reach into the housing to the other side of the strain relief.

Follow the scope of protection according to the German Institut for Standardizations VDE 0100-702 for the installation of the controller (distance to the scope of protection 0 and 1).

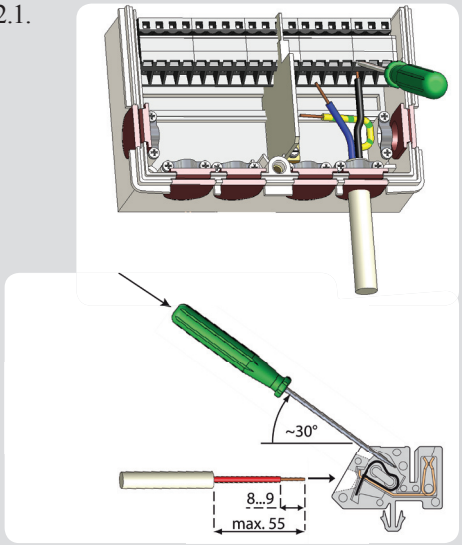


Danger of electric shock due to improper connection!
- Observe VDE and EVU regulations of the energy supply company.
- Install pumps and swimming pools and their scope of protection according to the German Institut for Standardization VDE 0100-702.
- Install a disconnecting device for the interruption of the power supply with min 3 mm of contact per pole.



Danger of electric shock due to voltage on the housing!
- A correctly configured motor overload switch must be installed. While doing so, observe the values on the name plate.
- Protect the power supply with a differential switch, nominal residual current I ΔN ≤ 30 mA.
- Only use suitable cables according to regional regulations.
- Adapt the minimum section of the pipe to the motor capacity and the performance range.
- Provide an emergency stop switch according to DIN EN 809 where dangerous situations could arise. The operator should make the decision based on this standard.

C.2.1.



1. Select necessary programme/hydraulics.
2. Open controller casing (“C.1. Wall installation” on page 8).
3. Strip cables by 55 mm, insert, fit the strain relief devices, strip the last 8-9 mm of the wires. (Fig. C.2.1.).
4. Open the terminals using a suitable screwdriver (Fig. C.2.1.) and make electrical connections on the controller.
5. Refit terminal connection cover and fasten screw.
6. Switch on mains voltage and place controller in operation.

C.3. Installing the water detectors

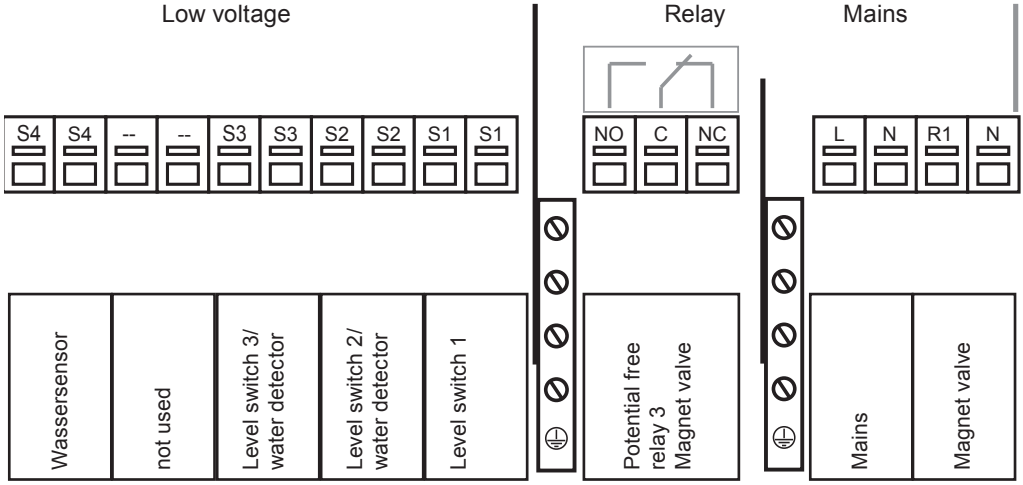
The controller operates with water detectors as an additional security measure to prevent water damage.

If desired the sensor cables can be extended to a maximum of 30 m using a cable with a cross-section of at least 0.75 mm². Make sure that there is no contact resistance!
Position the sensor precisely in the area to be measured!
Only use appropriate water detectors for the respective and authorised field of application.

The water detector cables must be routed separately from mains voltage cables and must not, for example, be routed in the same cable duct!

The polarity of the water detector is irrelevant. Position the water detector on the floor, where it is expected for water to collect. In this case all three contact feet must be wetted. The contact feet should always be blank, with no “adhesions”/corrosion/incrustations. Normally, the contact feet should be placed on a dry surface.

D. Terminal connection diagram



max. 12 V

Low voltage max. 12 VAC/DC

Terminal:	Connection for:
S1 (2x)	Level switch
S2 (2x)	Level switch 1/water detector
S3 (2x)	Level switch 2/water detector
-- (2x)	not used
S4 (2x)	Level switch 3/water detector

Mains voltage 230 VAC

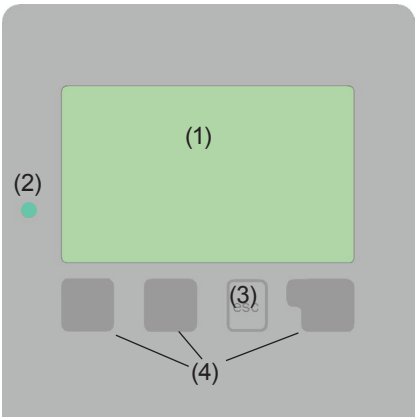
Mains voltage 230 VAC 50-60 Hz

Terminal:	Connection for:
N	Magnet valve (alarm signal) N
R1	Magnet valve (alarm signal) L
N	Mains neutral conductor N
L	Mains phase conductor L
NC	Normally closed R3
C	Magnet valve (alarm signal)
NO	Normally open R3

The PE protective conductor must be connected to the PE metal terminal block!

If the potential-free contact R3 is used a bridge is to be provided between the two PE metal terminal blocks!

E.1. Display and input



The display (1), with its extensive text and graphics mode, is almost self-explanatory, allowing easy operation of the controller.

Inputs are made with 4 buttons (3+4), which have different functions depending on the context. The “esc” key (3) is always used to cancel or exit a menu.

If applicable there will be a request for confirmation as to whether the changes which have been made should be saved.

The function of each of the other three keys (4) is shown in the display line directly above the keys; the right-hand key generally has a confirmation and selection function.

The LED (2) lights up when a solar request is active (Relais on/off). Other features of the LED are discribed in chapter Z.1.

Examples of display symbols:

 Pool

 Valve

 Level switch

 Water detector

 Warning/error message

 New infos

Examples of key functions:

+/-	= enlarge/shrink values
▼/▲	= scroll down/up menu
yes/no	= approve/cancel
info	= additional information
back	= to previous screen
ok	= confirm selection
confirm	= confirm setting

E.2. Commissioning help



The first time the controller is turned on and after the language and time are set, a query appears as to whether you want to parametrise the controller using the commissioning help or not. The commissioning help can also be terminated or called up again at any time in the special functions menu. The commissioning help guides you through the necessary basic settings in the correct order, and provides brief descriptions of each parameter in the display. Pressing the “esc” key takes you back to the previous value so you can look at the selected setting again or adjust it if desired. Pressing the “esc” key more than once takes you back step by step to the selection mode, thus cancelling the commissioning help. Finally, the menu “4.2. Manual” on page 17 should be used to test the switch outputs with the consumers connected and to check the sensor values for plausibility. Then the automatic mode can be switched on.

Observe the explanations for the individual parameters on the following pages and check whether further settings are necessary for your application.

E.3. Free commissioning

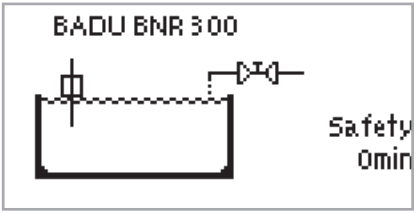
If you decide not to use the commissioning help, you should make the necessary settings in the following sequence:

- Menu 9. Language
- Menu 6.4. Time and date
- Menu 6.1. Program selection
- Menu 4. Settings, all values
- Menu 5. Protective functions, if necessary
- Menu 6. Special functions, if necessary

Finally, the menu “3.2. Manual” on page 17 should be used to test the switch outputs with the consumers connected and to check the sensor values for plausibility. Then the automatic mode can be switched on.

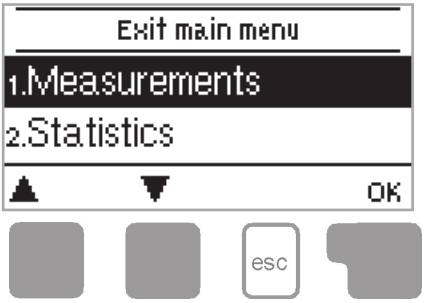
Observe the explanations for the individual parameters on the following pages and check whether further settings are necessary for your application.

E.4. Menu sequence and menu structure



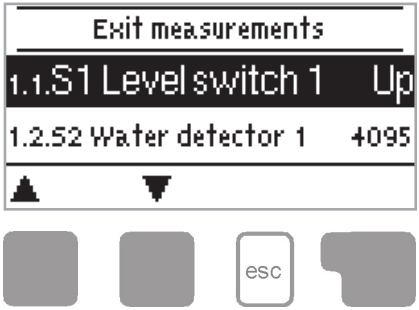
The graphics or overview mode appears when no key has been pressed for 2 minutes or when the main menu is exited by pressing the “esc” key.

Pressing a key in the graphics or overview mode will lead directly to the main menu. Here the following menues are available:



1. Measurements	Current values with explanations
2. Statistics	Function control of the system with operating hours etc.
3. Operating mode	Automatic mode, manual mode or switch unit off
4. Settings	Set parameters needed for normal operation
5. Protective functions	Safety shutdown, feed, water detector
6. Special functions	Programme selection, commissioning, clock etc.
7. Menu lock	Against unintentional setting changes at critical points
8. Service values	For diagnosis in the event of an error
9. Language	Language selection

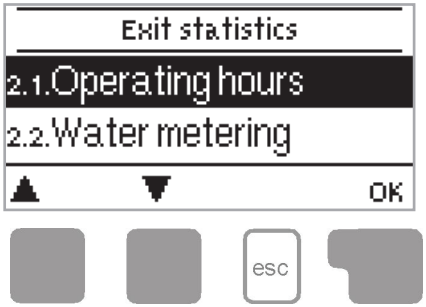
1. Measurements



The menu “1. Measurements” serves to display the actual water level and water detectors.

The menu is closed by pressing the “esc” key or selecting “Exit Measurements”.

2. Statistics



The menu “2. Statistics” is used for function control and long-term monitoring of the system.

The menu is closed by pressing the “esc” key or selecting “Exit statistics”.

For analysis of the system data it is essential for the time to be set accurately on the controller. Please note that the clock only has a battery reserve for 24 hours and must therefore be reset afterwards. Improper operation or an incorrect time may result in data being deleted, recorded incorrectly or overwritten.
The manufacturer accepts no liability for the recorded data!

2.1. Operating hours

Display of operating hours of the pump connected to the controller; various time ranges (day-year) are available.

2.2. Water metering

Displays the water metering for filling.

2.3. Shutdowns

Numbers of safety shutdowns.

2.4. Graphic overview

This provides a clearly organised display of the above mentioned data as a bar graph. Various time ranges are available for comparison. The two left-hand keys can be used to scroll through the data.

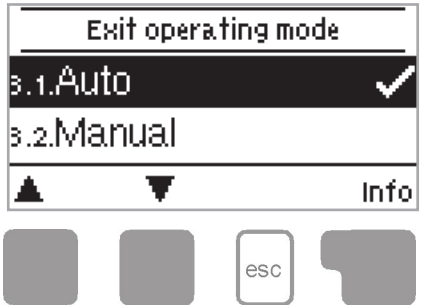
2.5. Message log

Displays the last 20 events occurring in the system with indication of date and time.

2.6. Reset/clear

Resetting and deleting the individual analyses. The function “All statistics” clears all analyses but not the error messages.

3. Operating mode



In the menu “4. Operating mode” the controller can either be placed in automatic mode, switched off or placed in a manual operating mode.

The menu is closed by pressing the “esc” key or selecting “Exit operating mode”.

3.1. Automatic

Automatic mode is the normal operating mode of the controller. Only automatic mode provides proper controller function taking into account the current position of the level switch/es and the parameters that have been set! After an interruption of the mains voltage the controller automatically returns to the last operating mode selected!

3.2. Manual

The relay and thus the connected consumer are switched on and off, with no regard to the current position of the level switch/es and the parameters which have been set, by pressing a key. The position of the level switch/es measured is also shown to provide an overview and function control.

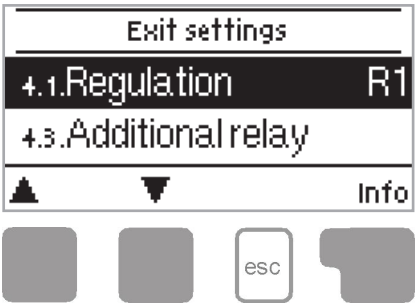
When the operating mode “Manual” is activated, the current position of the level switch/es and the selected parameters are no longer considered. The operating mode “Manual” may only be used by specialists for brief function tests or during commissioning!

If the manual mode is used when the pool water is filled for the first time, the commissioner must supervise throughout!

3.3. Off

When the operating mode “Off” is activated, all controller functions are switched off. The position of the level switch/es measured is still displayed to provide an overview.

4. Settings



The necessary basic settings required for the control function are made in the menu “5. Settings”.

This does not under any circumstances replace the safety facilities to be provided by the customer!

The menu is closed by pressing the “esc” key or selecting “Exit settings”.

The menu numbering can alter depending on the selection of hydraulic variant (see “7.1. Program selection” on page 26).

4.1. Regulation

Here the relay for the regulation can be specified. There are two relays available. The relay not being used can be used as an additional relay, see 4.3 Additional relay.
Setting range: R1, R3/Default: R1

4.2. Regulation mode

If programmes 5 or 6 are selected, the regulation mode is set here.
Setting range: Fill, Drain/Default: Fill

4.3. Additional relay

The settings for the additional relay can be set here.

4.3.1. Additional relay

In regulation mode the additional relay switches parallel to the regulation relay. A temporal dry run protection may also be set. In safety mode the relay switches following the end of the safety time or for other safety functions. An alarm signal can also be set in addition to the switching mode.
Setting range: Off, Regulation, Safety/Default: Off

4.3.2. Safety mode

„Continuous“ and „impulse“ are the modes available.
The “continuous” mode can be used to open a pool cover to prevent it from damage if the water level drops to low, for example. Another use would be to “drain”. The “Impulse” mode can be used to control an acoustic warning signal, for example.
Setting range: Continuous, Impuls/Default: Continuous

4.3.3. Impulse on-time

Impuls on-time in seconds for the additional relay in safety operation and impulse mode..
Setting range: 3 ... 30/Default: 10

4.3.4. Impulse off-time

Impuls off-time in seconds for the additional relay in safety operation and impulse mode.
Setting range: 3 ... 30/Default: 10

4.3.5. Unit of dry run protection

Unit for the dry run protection.
Setting range: Seconds, Minutes/Default: Minutes.

4.3.4. Dry run protection

Time for the dry run protection.
Setting range: Off ... 45/Default: 1

4.4. Unit

Unit for the switch-on delay of the regulation relay.
Setting range: Seconds, Minutes/Default: Seconds

4.5. Switch-on delay

The time set here represents the delay before the regulation relay switches on when the level switch is triggered. The relay only switches on if the switching conditions remain the same after the time set here.
Setting range: 0 ... 59/Default: 45

4.6. --

4.7. Unit

Unit for the switch-off delay of the regulation relay.
Setting range: Seconds, Minutes/Default: Seconds

4.8. Switch-off delay

The time set here represents the delay before the regulation relay switches off when the level switch is triggered. The relay only switches off if the switching conditions remain the same after the time set here.
Setting range: 0 ... 59/Default: 45

4.9. --

4.10. Water metering

A water metering function can be set for the regulation relay. The litre capacity per minute for the switching time of the regulation relay can be set here. The water meter reading for the current switching cycle is shown in the graphic overview. The total reading can be found under „Water metre“ in the statistics menu.
Settings range: Off, 1l/min ... 100l/min/Default: Off



During initial start-up with this function, the quantity of water to be refilled within a minute must be determined manually in litres. This can be read from the house water meter. Provided that the conditions (pressure) of the initial start-up are always present, a well calculated water metering function can be achieved.

4.11. Filling

This menu is used to set the daily filling time. This ensures that filling is only carried out for the time set here each day.
Up to three filtering times can be set each day and copied to another day. Therefore filling at night can be avoided.
Setting range: off, daily 0:00 - 23:59/Default: daily 6:00 - 22:00

4.12. Signal switch 1

The level switch mode can be set here depending on the type and use of the level switch.
In normal mode, the contact of the level switch is closed when the level switch is down.
In inverted mode, the contact of the level switch is open when the level switch is down.
Setting range: normal, invert/Default: normal

4.13. Signal switch 2

The level switch mode can be set here depending on the type and use of the level switch.
In normal mode, the contact of the level switch is closed when the level switch is down.
In inverted mode, the contact of the level switch is open when the level switch is down.
Setting range: normal, invert/Default: normal

4.14. Signal switch 3

The level switch mode can be set here depending on the type and use of the level switch.
In normal mode, the contact of the level switch is closed when the level switch is down.
In inverted mode, the contact of the level switch is open when the level switch is down.
Setting range: normal, invert/Default: normal

5. Protective functions



The menu “6. Protective functions” can be used to activate and set various protective functions.

This does not under any circumstances replace the safety facilities to be provided by the customer!

The menu is closed by pressing the “esc” key or selecting “Exit protective functions”.

If the safety shutdown has been triggered, the red LED and the display’s background lighting flash. To reset the safety shutdown system press and hold the middle two buttons for three seconds.

5.1. Safety shutdown

Once the control relay is switched on, the set time is counted down.
After this time, the safety shutdown is activated and the controller switches off all functions.
Starting is only possible after confirmation by pressing the two middle buttons for 3 seconds.
Setting range: 5min ... 180min/Default: 30min

5.2. Mode water detector 1

Activates water detector at S2. With the optionally available water detectors flooding of the cellar can be detected and the feed stopped.
Setting range: On, Off/Default: Off

5.3. Sensitivity water detector 1

Depending on the type and model the switching threshold of the detector can be set here. The aging of the contacts and the appearance of deposits may lead to a readjustment of the contacts being necessary. The currently measured ADC value can be read in the service values.
Setting range 0 ... 4095/Default: 3750

The sensitivity should not be set too high in order to guarantee the highest possible operational readiness. The sensitivity should be programmed on site. In addition to this the function should be tested and recorded every 3 months!

5.4. Mode water detector 2

Aktivates water detector at S3. With the optionally available water detectors flooding of the cellar can be detected and the feed stopped.
Setting range: On, Off/Default: Off

5.5. Sensitivity water detector 2

Depending on the type and model the switching threshold of the detector can be set here. The aging of the contacts and the appearance of deposits may lead to a readjustment of the contacts being necessary. The currently measured ADC value can be read in the service values.
Setting range 0 ... 4095/Default: 3750



The sensitivity should not be set too high in order to guarantee the highest possible operational readiness. The sensitivity should be programmed on site. In addition to this the function should be tested and recorded every 3 months!

5.6. Mode water detector 3

Activates water detector at S2. With the optionally available water detectors flooding of the cellar can be detected and the feed stopped.
Setting range: On, Off/Default: Off

5.7. Sensitivity water detector 3

Depending on the type and model the switching threshold of the detector can be set here. Even aging and depend on this deposits on the contacts can make a readjust of the switching threshold required. The currently measured ADC value can be read in the service values.
Setting range 0 ... 4095/Default: 3750



The sensitivity should not be set too high in order to guarantee the highest possible operational readiness. The sensitivity should be programmed on site. In addition to this the function should be tested and recorded every 3 months!

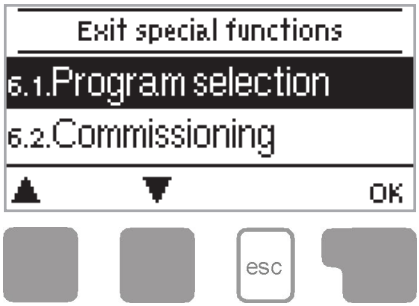
5.8. Limit for filling

Here a limit number of feeds per day can be set. If unusually high feed switches occur, it is assumed that there is a problem e.g. water loss or flooding. If the set limit is exceeded, the safety shutdown is activated and the controller switches off all functions. Starting is only possible after confirmation by pressing the two middle buttons for 3 seconds.
Setting range Aus ... 100/Default: Aus

5.9. Seizing protection

If the seizing protection is activated, the controller switches the relay in question and the connected consumer on every day at 12:00 (setting “daily”) or weekly on Sundays at 12:00 (setting “weekly”) for 5 seconds in order to prevent the pump and/or the ball valve from sticking after an extended stationary period.
Setting range R1: daily, weekly, off/Default: off
Setting range R2: daily, weekly, off/Default: off

6. Special functions



The menu “7. Special functions” is used to set basic items and expand functions.

Other than the time, all settings may only be made by a specialist.

The menu is closed by pressing the “esc” key or selecting “Exit special functions”.

6.1. Program selection

The suitable hydraulic variant for the specific application is selected and set here (see “B.6. Hydraulic variants” on page 7). The associated diagram is displayed after pressing “Info”.
Setting range: 1 - 6/Default: 1

Normally the program selection is made only once during initial commissioning by the specialist. Incorrect program selection can lead to unpredictable errors.

6.2. Commissioning

Starting the commissioning help guides you through the basic settings necessary for commissioning in the correct order and provides brief descriptions of each parameter in the display. Pressing the “esc” key takes you back to the previous value so you can look at the selected setting again or adjust it if desired. Pressing the “esc” key more than once takes you back to the selection mode, thus cancelling the commissioning help. (See also “E.2. Commissioning help” on page 13).

May only be started by a specialist during commissioning! Observe the explanations for the individual parameters in these instructions and check whether further settings are necessary for your application.

6.3. Factory settings

All of the settings that have been made can be reset, thus returning the controller to its delivery state.

The entire parametrisation, analyses etc. of the controller will be lost irrevocably. The controller must then be commissioned once again.

Special functions

6.4. Time and date

This menu is used to set the current time and date.

For analysis of the system data it is essential that the time is set accurately on the controller. Please note that the clock has a 24 hour battery reserve if the mains voltage is interrupted and must therefore be reset afterwards.

6.5. Daylight saving time

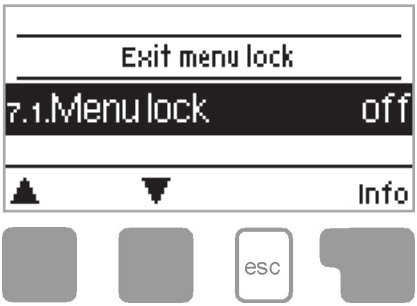
When this function is active, the controller's clock changes automatically to and from DST (daylight saving time).
Setting range: yes, no/Default: yes

6.6. Eco mode

When this function is active, the controller's backlight is automatically switched off when no button has been pressed for 2 minutes.
Setting range: yes, no/Default: yes

Menu lock

7. Menu lock



The menu "8. Menu lock" can be used to secure the controller from unintentional changing of the set values.

The menu is closed by pressing the "esc" key or selecting "Exit menu lock".

The menus listed below remain completely accessible despite the menu lock being activated and can be used to make adjustments if necessary:

1. Measurements
2. Analysis
3. Display mode

7.2. Time and date

8. Menu lock
9. Service values

To lock the other menus select "Menu lock on".
To enable the menus again select "Menu lock off".
Setting range: on, off/Default: off

Service values

8. Service values



The menu “8. Service values” can be used for remote diagnosis by a specialist or the manufacturer in the event of an error.

Enter the values at the time when the error occurs e.g. in the table.

The menu can be closed at any time by pressing the “esc” key.

Language

9. Language

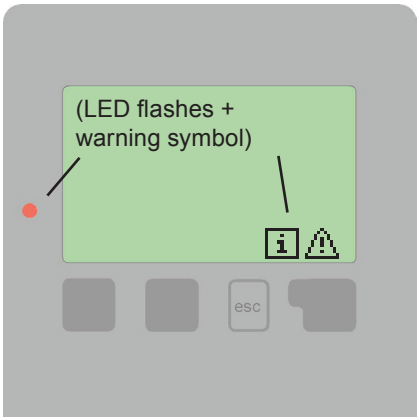


The menu “9. Language” can be used to select the language for the menu guidance. This is queried automatically during initial commissioning.

Default: Deutsch

The menu can be closed at any time by pressing the „esc“ key or selecting „exit language“.

Z.1. Malfunctions with error messages



If the controller detects a malfunction, the red light flashes and the warning symbol also appears in the display. If the error is no longer present, the warning symbol changes to an info symbol and the red light no longer flashes. To obtain more detailed information on the error, press the key under the warning or info symbol.

Do not try to deal with this yourself.
Consult a specialist in the event of an error!

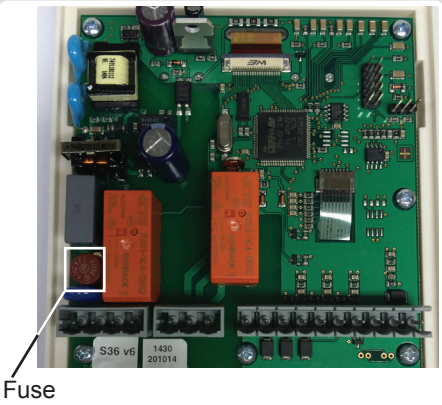
Possible error messages:	Notes for the specialist:
Restart ---------->	Means that the controller was restarted, for example due to a power failure. Check date and time!

Z.2. Replacing the fuse

Repairs and maintenance may only be performed by a specialist. Before working on the unit, switch off the power supply and secure it from being switched on again! Check for the absence of power!

Only use the spare fuse supplied or a fuse of the same design with the following specifications: T 2 A/250 V

Z.2.1.



If the mains voltage is switched on and the controller still does not function or display anything, the internal device fuse may be faulty. In that case, open the device as described under C, remove the old fuse and check it. Replace the faulty fuse with a new one, locate the external source of the error (e.g. pump) and repair or replace it.
Then recommission the controller and check the function of the switch outputs in manual mode first as described under “3.2. Manual” on page 17.

Z.3. Maintenance

In the course of the general annual maintenance of your level controller you should also have the functions of the controller checked by a specialist and have the settings optimised if necessary.

Performing maintenance:
- Check the time and date (see “6.4. Time and date” on page 24)
- Assess/check plausibility of analyses (see “2. Statistics” on page 16)
- Check the error memory (see “2.5. Message log” on page 16)
- Verify/check plausibility of the current measurements (see “1. Measurements” on page 15)
- Check the switch outputs/consumers in manual mode (see “3.2. Manual” on page 17)
- If possible, optimise the parameter settings

Commissioner’s notes:

SPECK Pumpen Verkaufsgesellschaft GmbH
Hauptstr. 3
91233 Neunkirchen am Sand
Germany

Hydraulic variant set:

Commissioned on:

Commissioned by:

Final declaration:
Although these instructions have been created with the greatest possible care, the possibility of incorrect or incomplete information cannot be excluded. Subject as a basic principle to errors and technical changes.

SPECK pumpen

EG - Konformitätserklärung
DE / FR / EN / IT / NL / FI / ES / PL / CS / SK / DA / SE / TR / RU

Déclaration CE de conformité / EC declaration of conformity / Dichiarazione CE di conformità / EG-verklaring van overeenstemming / EU-yhtäpitävyysilmoitus / Declaración de conformidad / Deklaracja zgodności CE / ES prohlášení o shodě / ES vyhlásenie o zhode / EF-overensstemmelseserkl æring / EG-deklaration om överensstämmelse / AT Uygunluk Beyanı / Декларация соответствия ЕС

211

Hiermit erklären wir, dass das Pumpenaggregat / Maschine

Par la présente, nous déclarons que le groupe moteur-pompe / Herewith we declare that the pump unit / Si dichiara, che la pompa / hiermee verklaren wij, dat het pompaggregaat / Täten ilmoitamme, että pumppulaite / Por la presente declaramos que la unidad de bomba / Niniejszym oświadczamy, że pompa / Prohlašujeme, že níže uvedené čerpadlo / Vyhlasujeme, že nižšie uvedené čerpadlo: / Hermed erklærer vi, at pumpeaggregatet/maskinen / Härmed tillkännager vi att pumpaggregatet/maskinen / A şağıda adı geçen pompa ünitesinin/makinenin / Настоящим мы заявляем, что насосный агрегат/машина

Baureihe

Série / Series / Serie / Serie / Mallisarja / Serie / Typoszereg / Série / Série / Serie / Serie / Seri / Серии

BADU BNR 300

folgenden einschlägigen Bestimmungen entspricht:

correspond aux dispositions pertinentes suivantes: / complies with the following provisions applying to it: / è conforme alle sequenti disposizioni pertinenti: / in de door ons geleverde uitvoering voldoet aan de eisen van de in het vervolg genoemde bepalingen: / cumple las siguientes disposiciones pertinentes: / vastaa seuraavia asiaan kuuluvia määräyksiä: / odpowiada następującym odnośnym normom: / je v souladu s požadavky směrnic, které se na něj vztahují: / je v súlade s požiadavkami smerníc, ktoré sa na nej vzťahujú: / opfylder følgende gældende bestemmelser: / uppfyller följande tillämpliga bestämmelser: / aşağıda belirtilen geçerli yönetmeliklere uygun olduğunu beyan ediyoruz: / отвечает соответствующим положениям:

EG-Niederspannungsrichtlinie 2014/35/EU

Directives basse tension 2014/35/UE / Low voltage directive 2014/35/EU / CE-Direttiva di bassa tensione 2014/35/EU / EG-laagspanningsrichtlijn 2014/35/EU / EU-pienjännitedirektiivi 2014/35/EU / directiva de baja tensión 2014/35/UE / Dyrektywa niskonapięciowa 2014/35/UE / nízkonapěťová směrnice 2014/35/EU / nízkonapäťová smernica 2014/35/EU / EF-lavspændingsdirektiv 2014/35/EU / EG-lågspänningsdirektivet 2014/35/EU / AT Alçak Gerilim Yönetmeliği 2014/35/EU / Директива ЕС по низким напряжениям 2014/35/EU

EMV-Richtlinie 2014/30/EU

Directives CE sur la compatibilité électromagnétique 2014/30/UE / EMC-Machinery directive 2014/30/EU / Direttiva di compatibilità elettromagnetica 2014/30/EU / Richtlijn 2014/30/EU / Sähkömagneettinen yhteensopivuus (EMC) konedirektiivi 2014/30/EU / directiva 2014/30/UE / Dyrektywa kompatybilność elektromagnetyczna (EMC) 2014/30/UE / směrnice o elektromagnetické kompatibilitě 2014/30/EU / smernica o elektromagnetickej kompatibilite 2014/30/EU / EMC-direktiv 2014/30/EU / EMC-direktivet 2014/30/EU / EMC Yönetmeliği 2014/30/EU / Директива по электромагнитной совместимости 2014/30/EU

EG-Richtlinie 2002/96/EG (WEEE)

Directive 2002/96/CE (DEEE) / Directive 2002/96/EC (WEEE) / Direttiva 2002/96/CE (WEEE) / EG-Richtlijn 2002/96/EG (WEEE) / EU-direktiivi 2002/96/EC (WEEE) / CE-Directiva 2002/96/EG (tratamiento de residuos de componentes de aparatos eléctricos y electrónicos en desuso / Dyrektywa 2002/96/EG (WEEE)) / směrnice 2002/96/ES (WEEE) / smernica 2002/96/ES (WEEE) / EF-direktiv 2002/96/EF (WEEE) / EG-direktivet 2002/96/EG (WEEE) / AT Yönetmeliği 2002/96/AT (WEEE) / Директива ЕС 2002/96/EG (WEEE)

EG-Richtlinie 2011/65/EG (RoHS)

Directive 2011/65/CE (RoHS) / Directive 2011/65/EC (RoHS) / Direttiva 2011/65/CE (RoHS) / EG-Richtlijn 2011/65/EG (RoHS) / EU-direktiivi 2011/65/EC (RoHS) / CE-Directiva 2011/65/EG (limitación de utilización de determinados productos peligrosos en aparatos eléctricos y electrónicos / Dyrektywa 2011/65/EG (RoHS)) / směrnice 2011/65/ES (RoHS) / smernica 2011/65/ES (RoHS) / EF-direktiv 2011/65/EF (RoHS) / EG-direktivet 2011/65/EG (RoHS) / AT Yönetmeliği 2011/65/AT (RoHS) / Директива ЕС 2011/65/EG (RoHS)

Angewendete harmonisierte Normen, insbesondere

Normes harmonisées utilisées, notamment: / Applied harmonized standard in particular / Norme armonizzate applicate in particolare / Gebruikte geharmoniseerde normen, in het bijzonder / Käytettyjä harmonisoituja normeja, erityisesti / Normas armonizadas aplicadas, especialmente / Zastosowane normy zharmonizowane, w szczególności / za použití následujících harmonizovaných norem / za použití nasledujúcich harmonizovaných noriem / Anvendte harmoniserede standarder, is ær / Tillämpade harmoniserade normer, i synnerhet / Uygulanmış harmonize standartlar, özellikle / Использованные согласованные нормы, в особенности

EN 60730-2-9:2010 Automat. Elektrische Regel- und Steuergeräte für den Hausgebrauch

EN 60730-1:2000 +A2:2008 Automat. Elektrische Regel- und Steuergeräte für den Hausgebrauch

EN 61000-3-2:2006 EMV

EN 61000-3-3:2008 EMV

91233 Neunkirchen am Sand, 17.09.2014

Ort, Datum / Fait à, le / Place, date / Località, data / Plaats, Datum / Paikka, Päiväys / Lugar, Fecha / Miejscowość, Data / Místo, datum / Miesto, dátum / Sted, dato / Ort, datum / Yer, Tarih

SPECK Pumpen Verkaufsgesellschaft GmbH
Hauptstraße 3, 91233 Neunkirchen am Sand, Germany

Adresse / Adresse / Address / Indirizzo / Adres / Osoite / Dirección / Adres / Adresa / Adresa / Adresse / Adress / Adres

i.V. S. Watolla, Techn. Leiter

"Directeur Technique / Technical director / Direttore tecnico / Technisch directeur / Kierownik techniczny / Technický reditel / Technický riaditel / Teknisk chef / Tekn. Chef / Teknik Müdür / Технический руководитель

A. Herger, Geschäftsführer

Gérant / Director / Amministratore / Bedrijfsleider / Toimitusjohtaja / Gerente / Dyrektor zarządzający / Ředitel prodeje marketingu / Obchodný riaditeľ / Direktør / Verkställande direktör / Genel Müdür / Директор