

Swimming pool controller Splash Control 2

EN



A2780

Please carefully read these operating instructions before use. · Do not discard.
The operator shall be liable for any damage caused by installation or operating errors.
The latest version of the operating instructions are available on our homepage.

General non-discriminatory approach

In order to make it easier to read, this document uses the male form in grammatical structures but with an implied neutral sense. The document is always aimed equally at women, men and gender-neutral persons. We kindly ask readers for their understanding in this simplification of the text.

Supplementary information

 Please read the supplementary information in its entirety.

Information



This provides important information relating to the correct operation of the unit or is intended to make your work easier.

Warning information

Warning information includes detailed descriptions of the hazardous situation, see  *Chapter 2.1 'Labelling of Warning Information' on page 11.*

The following symbols are used to highlight instructions, links, lists, results and other elements in this document:

Tab. 1: More symbols

Symbol	Description
1. 	Action, step by step.
	Outcome of an action.
	Links to elements or sections of these instructions or other applicable documents.
	List without set order.
[Button]	Display element (e.g. indicators). Operating element (e.g. button, switch).

Symbol	Description
<i>'Display/GUI'</i>	Screen elements (e.g. buttons, assignment of function keys).
CODE	Presentation of software elements and/or texts.

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1 Function

The swimming pool controller is intended for the simultaneous measurement and control of the measured variables pH and ORP. The device provides basic functions for applications in swimming pool water treatment.

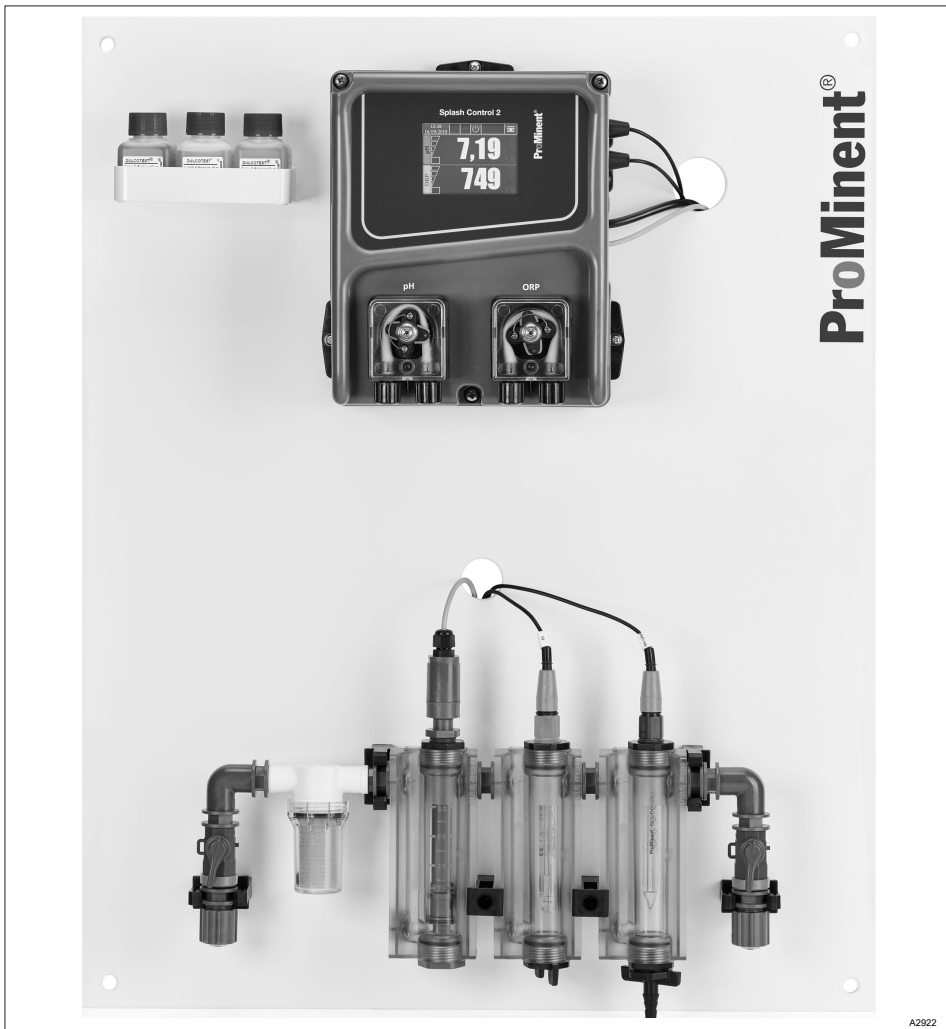


Fig. 1: Plate-mounted swimming pool controller, with bypass fitting DGMA, sensors and buffer solutions.

Applications:

- Swimming pool water treatment

Main functions

Function	Specification(s)	Comment(s)
Control/measuring channels	pH functional scale ORP functional scale	Scale: 4.00 ... 14.0 pH Resolution: 0.01 pH at pH < 10 Precision: 0.5%. Scale: 0 ... 999 mV Resolution: 01 mV Precision: 0.5%.
Control mode	On/Off with hysteresis or linear with proportional cycles	Control from 0 ... 100% of the programmed scale
Setpoint	pH value: 6 ... 9 pH value in increments of 0.01 pH ORP: 300 .. 950 mV in increments of 1 mV	
Direction	Upward or downward function(s)	
Alarms	Lower and higher measured value, sensor error, over-metering time exceeded.	Control of the upper and lower threshold values.
Control in a closed control circuit	Remote control	Filtration contact.
Timer	Programming the relay to a timer	8 slots per day
Calibration	Using a hand-held device unit or with reagents (see accessories).	
Maintenance	Maintenance support	

1.1 Scope of delivery

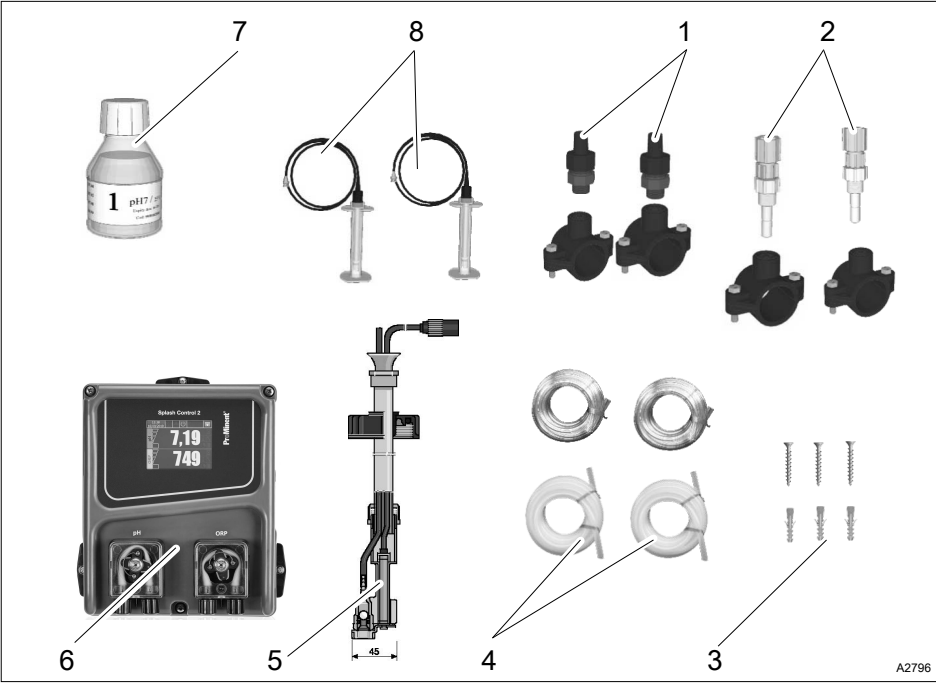


Fig. 2: Scope of delivery

- | | | | |
|---|-------------------------------------|-----------|---|
| 1 | Assembly set for pH and ORP sensors | 6 | Measuring/control device |
| 2 | Product injection kit | 7 | Buffer, 7 pH |
| 3 | Wall screw set | 8 | Pressure-tight pH and ORP sensors (3 bar) |
| 4 | Hoses for pH/ORP pump | Not shown | Assembly and operating instructions |
| 5 | Suction lance | | |

Tab. 2: Mounting kit

Parts	Part number
Bypass fitting DGMA320T040	1078907
pH sensor	1051745
ORP sensor	1051746
Buffer solution pH 7, green, 50 ml	506253
Buffer solution ORP, 220 mV, 50 ml	506244
Suction lance for connection to disposable storage tanks with a volume of 5 ... 60 litres with 2 m long suction hose 6/4 mm	802077
Injection lance, short, complete, R 1/2 PCB	1028363
Hose Ø 6/ 4 mm soft PVC 5 m	1004520
Coaxial cable combination 0.8 m, SN6-BNC	1033988
Woven hose, Ø 4/10 mm, 10 m, soft PVC	1004534
Hose adhesive nipple, complete, Ø16-12x6 PCB	817095
Nipple 21.91.05 Ø20 1/2" PVC	356910
Woven hose, Ø 6/12 mm, 10 m, soft PVC	1004539

1.2 Versions

Device	Power supply	Sensor	Metering systems	Part number
Splash Control 2, 0.4 l/h	230 V $\pm$ 10%, 50 Hz $\pm$ 10%	pH and ORP with 6 m cable	Pumps 2x0.4 l/h	1101133
Splash Control 2, 0.8 l/h	230 V $\pm$ 10%, 50 Hz $\pm$ 10%	pH and ORP with 6 m cable	Pumps 2x0.8 l/h	1101164

Function

Device	Power supply	Sensor	Metering systems	Part number
Splash Control 2, 1.6 l/h Equipment, Ø50, with 1 m cable, 3x0.75 mm ²	230 V ± 10%, 50 Hz ± 10%	pH and ORP with 6 m cable	Pumps 2x1.6 l/h	1101165
Splash Control 2, 2.4 l/h Equipment, Ø50, with 1 m cable, 3x0.75 mm ²	230 V ± 10%, 50 Hz ± 10%	pH and ORP with 6 m cable	Pumps 2x2.4 l/h	1101166

1.3 Nameplate

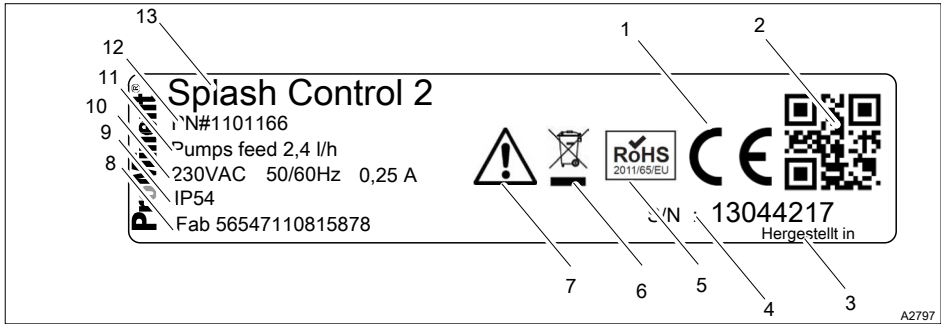


Fig. 3: Nameplate

- | | | | |
|---|--------------------------------|----|---|
| 1 | CE | 8 | Manufacturer |
| 2 | QR code | 9 | Protection class |
| 3 | Country of manufacture | 10 | Mains voltage/Maximum power consumption in amps |
| 4 | Serial number | 11 | Pump capacity |
| 5 | RoHS | 12 | Order number |
| 6 | Information on disposal | 13 | Product name |
| 7 | Special risks. Read the manual | | |

2 Safety and responsibility

2.1 Labelling of Warning Information

Introduction

These operating instructions provide information on the technical data and functions of the product. These operating instructions provide detailed warning information and are provided as clear step-by-step instructions.

The warning information and notes are categorised according to the following scheme. A number of different symbols are used to denote different situations. The symbols shown here serve only as examples.



DANGER!

Nature and source of the danger

Consequence: Fatal or very serious injuries.

Measure to be taken to avoid this danger.

Description of hazard

- Denotes an immediate threatening danger. If the situation is disregarded, it will result in fatal or very serious injuries.



WARNING!

Nature and source of the danger

Possible consequence: Fatal or very serious injuries.

Measure to be taken to avoid this danger.

- Denotes a possibly hazardous situation. If the situation is disregarded, it could result in fatal or very serious injuries.



CAUTION!

Nature and source of the danger

Possible consequence: Slight or minor injuries. Material damage.

Measure to be taken to avoid this danger.

- Denotes a possibly hazardous situation. If the situation is disregarded, it could result in slight or minor injuries. May also be used as a warning about material damage.

NOTICE!

Nature and source of the danger

Damage to the product or its surroundings.

Measure to be taken to avoid this danger.

- Denotes a possibly damaging situation. If the situation is disregarded, the product or an object in its vicinity could be damaged.

Type of information

Hints on use and additional information.

Source of the information. Additional measures.

- *Denotes hints on use and other useful information. It does not indicate a hazardous or damaging situation.*

WARNING!

Danger from hazardous substances!

Possible consequence: Fatal or very serious injuries.

Please ensure when handling hazardous substances that you have read the latest safety data sheets provided by the manufacture of the hazardous substance. The actions required are described in the safety data sheet. Check the safety data sheet regularly and replace, if necessary, as the hazard potential of a substance can be re-evaluated at any time based on new findings.

The system operator is responsible for ensuring that these safety data sheets are available and that they are kept up to date, as well as for producing an associated hazard assessment for the workstations affected.

WARNING!

Unauthorised access!

Possible consequence: Fatal or very serious injuries.

- Measure: Ensure that there can be no unauthorised access to the device.

2.2 General safety information

WARNING!

Live parts!

Possible consequence: Fatal or very serious injuries

- Measure: Ensure that the devices are de-energised before opening the housing or carrying out installation work.
- Disconnect damaged or faulty devices from the power supply, as well as devices that have been tampered with.



WARNING!

Operating faults!

Possible consequence: Fatal or very serious injuries.

- Ensure that the device is only operated by adequately qualified and technically expert personnel.
- Please also observe the operating instructions for sensors and fittings and any other units which may be fitted, such as sample water pumps ...
- The operator is responsible for ensuring that personnel are qualified.



WARNING!

Mixing of chemicals

Possible consequence: Fatal or very serious injuries.

Never inject chemicals into water-free pipes or without water circulation. Mixing chemicals can be harmful to health and result in severe lesions to the eyes, skin or mucous membranes. Always observe the safety data sheet for the chemicals used.



NOTICE!

Correct sensor operation

Damage to the product or its surroundings.

- Correct measurement and metering is only possible if the sensor is working perfectly.
- Check and calibrate the sensor regularly.



Protection of radio reception

This equipment is not intended to be used in residential areas and cannot guarantee appropriate protection of radio reception in these environments.

2.3 Intended use



Intended use

The device is designed to measure and regulate liquid media. The labelling of the measured variables is indicated in the controller display and is absolutely binding.

Only use the unit in accordance with the technical details and specifications provided in these operating instructions and in the operating instructions for the individual components (such as sensors, fittings, calibration devices, metering pumps, etc.).

All other uses or modifications are prohibited.



Time constant > 30 seconds

- *The controller can be used in processes, which have a time constant of > 30 seconds.*



Interference resistance

The device complies with the interference resistance provisions in accordance with EN 61326-1 and is intended for use in industrial electromagnetic environments and in residential areas.

2.4 User qualification



WARNING!

Danger of injury with inadequately qualified personnel

The operator of the system / equipment is responsible for ensuring that the qualifications are fulfilled.

If inadequately qualified personnel work on the unit or loiter in the hazard zone of the unit, this could result in dangers that could cause serious injuries and material damage.

- All work on the unit should therefore only be conducted by qualified personnel.
- Unqualified personnel should be kept away from the hazard zone.

The pertinent accident prevention regulations, as well as all other generally acknowledged safety regulations, must be adhered to.

Training	Definition
Instructed personnel	An instructed person is deemed to be a person who has been instructed and, if required, trained in the tasks assigned to him and possible dangers that could result from improper behaviour, as well as having been instructed in the required protective equipment and protective measures.
Trained user	A trained user is a person who fulfils the requirements made of an instructed person and who has also received additional training specific to the system from the manufacturer or another authorised distribution partner.
Trained, qualified personnel	A trained, qualified employee is deemed to be a person who is able to assess the tasks assigned to him and recognize possible hazards based on his training, knowledge and experience, as well as knowledge of pertinent regulations. A trained, qualified employee must be able to perform the tasks assigned to him independently with the assistance of drawing documentation and parts lists. The assessment of a person's technical training can also be based on several years of work in the relevant field.

Training	Definition
Electrical technician	An electrical technician is able to complete work on electrical systems and recognise and avoid possible dangers independently based on his technical training and experience as well as knowledge of pertinent standards and regulations. An electrical technician must be able to perform the tasks assigned to him independently with the assistance of drawing documentation, parts lists, terminal and circuit diagrams. The electrical technician must be specifically trained for the working environment in which the electrical technician is employed and be conversant with the relevant standards and regulations.
Service	The Service department refers to service technicians, who have received proven training and have been authorised by the manufacturer to work on the system.

3 Storage and Transport

Ambient conditions for storage and transport



CAUTION!

- Prior to storage or transport, ensure that the system is free from feed chemical and water
- Flush out the media carrying parts including the hoses using clean pure water
- Store and transport the system in its original packaging.
- Also protect the packaged systems against damp, exposure to chemicals and mechanical effects
- Please also observe the operating instructions for fittings and other units, such as sensors, filters, metering pumps ...

Storage temperature: 0 ... 55 °C

air humidity: < 95% relative air humidity, non-condensing

Humidity: None. Rain and condensation not permitted.

Other: No dust, no direct sunlight.



NOTICE!

If the system is stored as an assembly with other components, then the storage and transport conditions should be appropriate for the component with the least resistance to external influences.

4 Mounting and installation



Indoors or protective covering

The device is only intended for use indoors. When using outdoors, provide a protective housing to offer protection against the weather and sunlight (UV radiation).



Load-bearing strength of the wall

Ensure that the wall has sufficient load-bearing strength to ensure that the device can be safely mounted. Assemble the device using 3 screws.

- **User qualification, mechanical and hydraulic installation:** trained qualified personnel ↗ *Chapter 2.4 'User qualification' on page 15*
- **User qualification, electrical installation:** Electrical technician ↗ *Chapter 2.4 'User qualification' on page 15*

4.1 Ambient conditions

Permissible ambient temperature: 1 ... 40 °C

Permissible medium temperature: 10 ... 45 °C

Air humidity: < 95% relative humidity, non-condensing

Humidity: None. Avoid rain and condensation.

Other: No dust, no direct sunlight.

4.2 Wall-mounted



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Fig. 4: Wall-mounted

I, Housing dimensions in mm.

II Fixing points in mm.

Install the unit so that it is easily accessible. The unit needs to be easy to read and accessible for all supply line and discharge pipes.

➡ Use the fittings to fit the unit on a load-bearing wall.

4.3 Installing hose lines

Assembling the suction and discharge lines:



Only use the specified hose dimensions, otherwise the durability of the connection cannot be guaranteed.

Avoid reducing the hose sizes. Ensure that the hose lines used are capable of withstanding twice the operating pressure of the peristaltic pump.

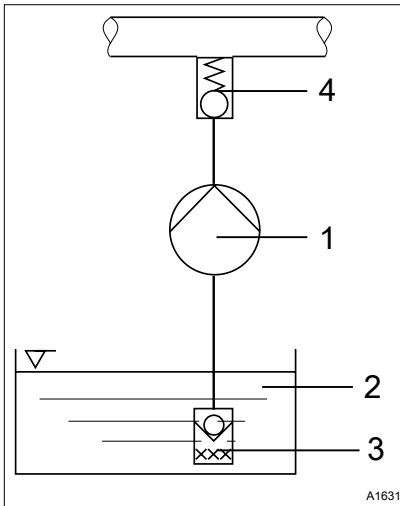


Fig. 5: Installation diagram

1. Peristaltic pump
2. Dosing tank
3. Foot valve or suction lance
4. Injection valve

1. ➔ Cut the end of the hose at right angles.
2. ➔ Unscrew a union nut and slide the union nut over the pump hose.

3. ➔ Push the hose end over the nozzle as far as the stop.
4. ➔ Connect the discharge line to the right hose connector.
5. ➔ Connect the suction line to the left hose connector.
6. ➔ Tighten the union nuts.
7. ➔ Shorten the free end of the suction line so that the foot valve hangs just above the base of the tank. With feed chemicals that can form sediment, ensure that the foot valve is suspended a minimum of 50 mm above the base of the tank.
8. ➔ Lead a hose line from the leakage nipple to the storage tank for the respective feed chemical.

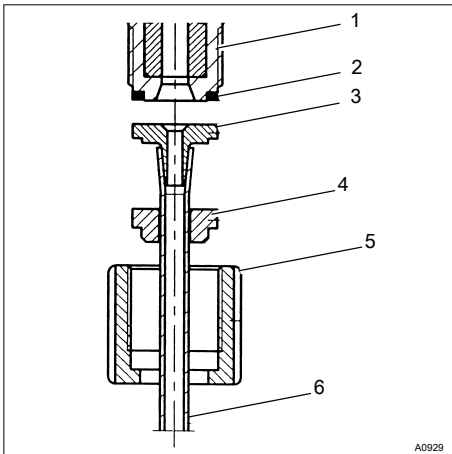


Fig. 6: Connecting the hose using the connector kit

1. Valve
2. O-ring
3. Nozzle
4. Clamp ring
5. Union nut
6. Hose

4.4 Installation (electrical)



WARNING!

Failure of the circulating pumps

In the event that the circulating pump fails, the control for the corresponding swimming pool has to be stopped. It is not sufficient to use the in-line probe housing's sample water limit contact alone. You need to take appropriate additional measures.

The following are suitable as triggers for the measures:

- the potential-free contact of the filter control,
- the potential-free contact of the circulating pump's motor protection switch,
- a flow monitor in the circulation line.



WARNING!

Safe operating status

Take safety precautions on the hardware and software side to ensure that the unit is in a safe operating status in the event of a fault, for example use a limit switch, a mechanical lock etc.

During installation, ensure that the unit is not energised.

Ensure that the installation is only carried out by technically trained personnel.

Observe the technical data in these instructions.

1. ➤ Insert multiple sealing inserts (3) into the threaded connectors depending on the cable diameter used
2. ➤ Guide the cable into the threaded connectors
3. ➤ Tighten the union nuts (2) on the threaded connectors so that they are properly sealed
4. ➤ Place the front part onto the rear part
5. ➤ Manually tighten the four housing screws
6. ➤ Once again check that the seal is seated properly. Degree of protection IP 54 can only be achieved if it is correctly fitted.

4.5 Connecting sensors



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Fig. 7: Connecting sensors

The sensor's plug-in connections are high-ohmic inputs. The plug-in connections need to be clean and kept free of moisture or corrosion.

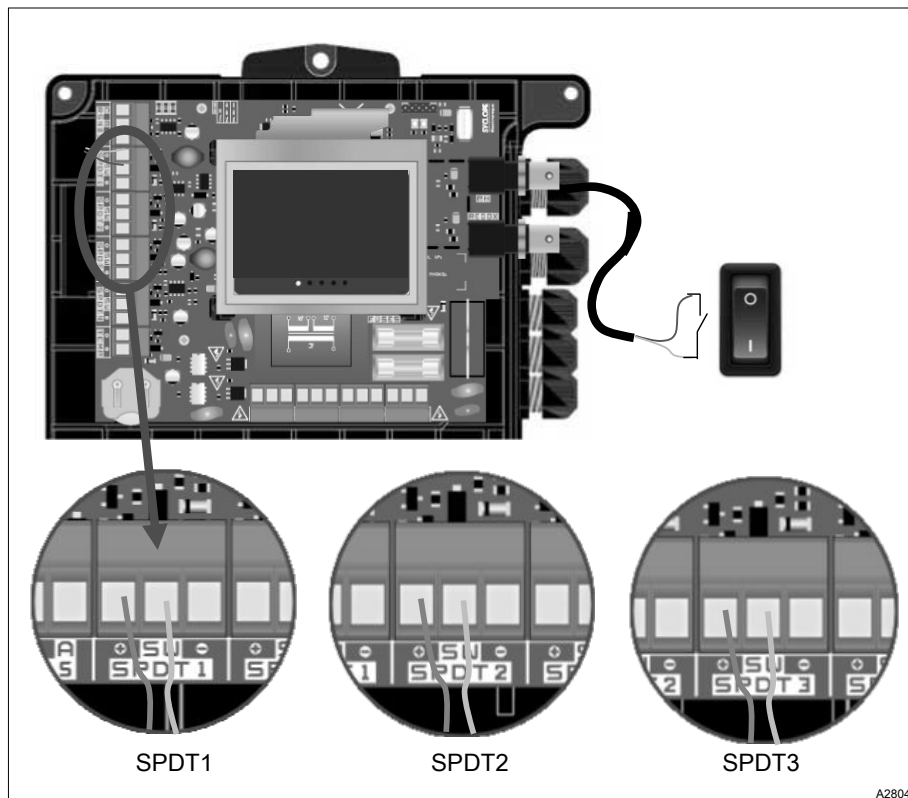
1. Fit the plug onto the socket.
2. Rotate the plug 90° to lock the plug in place.
3. Carry out the same procedure for the second plug if you need to.

4.6 Potential-free switch connector (e.g. remote control)

SPDT1: The SPDT1 input is assigned to the remote control contact.

SPDT2: The SPDT2 input is assigned to the base valve or the suction lance of the pH storage tank.

SPDT3: The SPDT3 input is assigned to the base valve or the suction lance of the ORP storage tank.

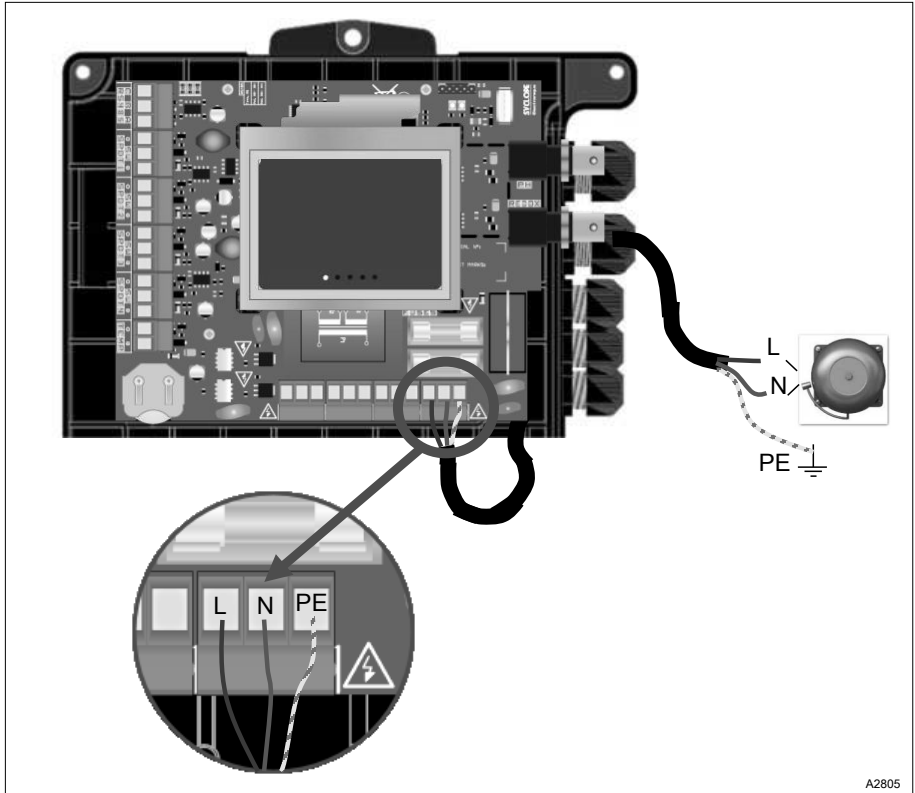


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Fig. 8: Potential-free switch connector (remote control)

1. ➤ De-energise the unit.
2. ➤ Remove the front cover
3. ➤ Strip the cable to obtain 7 mm blank cable wires.
4. ➤ Insert the cable through a cable opening.
5. ➤ Connect the cable to the terminals with (SW) and (+).
6. ➤ Tighten the cable connector to guarantee its leak-tightness.
7. ➤ Refit the front cover.
8. ➤ Put the sensor into operation.

4.7 Powered relay connector



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Fig. 9: Powered relay connector

Use a cable with at least 1.5 mm² per cable wire.

1. De-energise the unit.
2. Remove the front cover
3. Strip the cable to obtain 7 mm blank cable wires.
4. Insert the cable through a cable opening.
5. Connect the cable earth to PE.
6. Connection Phase to L.
7. Connection the Neutral wire to N.

Mounting and installation

8. Tighten the cable connector to guarantee its leak-tightness.

9. Refit the front cover.

10. Put the sensor into operation.

4.8 Terminal diagram

Terminal identifier:			Input:	Note:
RS 485	C		Mass	Modbus RTU, RS 485
	B		B	
	A		A	
SPDT 1	(+)	Connect (+) and SW*	Remote control input Pause control	Active (NC), normally closed, bridge, upon delivery
	SW*			
	(-)			
SPDT 2	(+)	Connect (+) and SW*	Level switch, pH correction (pH)	Active (NC), normally closed, bridge, upon delivery or 2-stage level sensor cable, brown + blue
	SW*			
	(-)			
SPDT 3	(+)	Connect (+) and SW*	Level switch, disinfection (ORP)	Active (NC), normally closed, bridge, upon delivery or 2-stage level sensor cable, brown + blue
	SW*			
	(-)			
SPDT 4	(+)	Connect (+) and SW*	Flow switch, sample water	"Active (NC), normally closed, DGMa, terminal 1+2, connected or bridge, upon delivery"
	SW*			
	(-)			
Temp	(+)		Temperature sensor	4 ... 20mA $\pm$ -5 ... 45 °C.
	(-)			

*= SW > **[SW]**ITCH > switch



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Fig. 10: Splash Control 2 with connected DGMA and bridges on the non-assigned terminals.

4.9 Cable Cross-Sections and Cable End Sleeves

	Minimum cross-section	Maximum cross-section	Stripped insulation length
Without cable end sleeve	0.25 mm ²	1.5 mm ²	
Cable end sleeve without insulation	0.20 mm ²	1.0 mm ²	8 - 9 mm
Cable end sleeve with insulation	0.20 mm ²	1.0 mm ²	10 - 11 mm

4.10 Electrical fuses

Parameter	Specification(s)	Markings(s)
Electrical fuse	Glass fuse, 5x20 , slow-acting, 250 mA	F3
	Glass fuse, 5x20 , slow-acting, 3.15 A	F2

■ **User qualification:** instructed user *Chapter 2.4 'User qualification' on page 15*



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5.1 Settings in the header

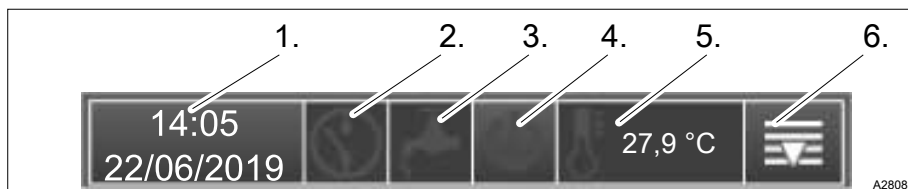
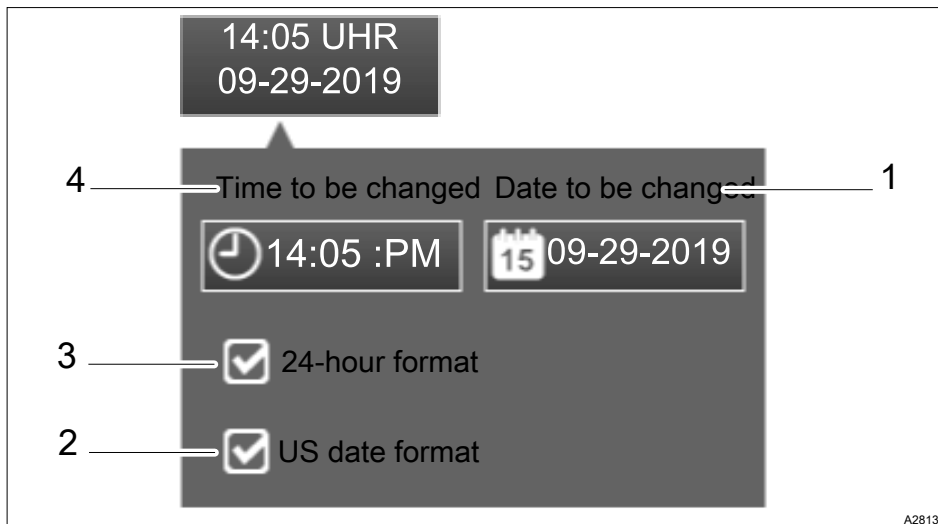


Fig. 12: Settings in the header

- | | | | |
|---|----------------------|---|-----------------|
| 1 | Date and time | 4 | Off/On switch |
| 2 | General notification | 5 | Temperature |
| 3 | General notification | 6 | Programming key |

Key	Function
1	This key is used to set the date and time. Press this key to open the setting menu.
2	This symbol indicates that the remote input is in an alarm state.
3	This symbol indicates that the flow monitor input is in an alarm state.
4	Control on (green symbol) - Press this key to switch off the control. Control off (red symbol) - Press this key to switch on the control.
5	This symbol is used to display the temperature.
6	This key is used to call up the menu to program the unit parameters. Press this key to open the menu.

5.1.1 Setting the date and time



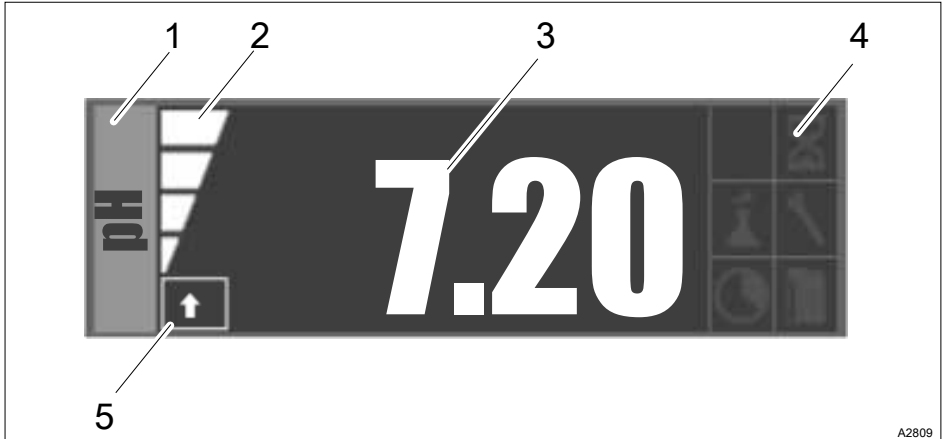
A2813

Fig. 13: Date and time field

- 1 Date to be changed
- 2 US date format
- 3 24-hour format
- 4 Time to be changed

1. ➡ Change the settings by pressing the date and time field.
2. ➡ Disabling the "24-hour format" displays the time as a 12-hour format.
3. ➡ Ticking the *[US date format]* box displays the date as '*mm / dd / yyyy*'.
4. ➡ Pressing the date and time field when closing the time/date setting display activates the device's time/date setting.
5. ➡ The time/date inputted is not saved if the timer screen automatically closes when the waiting time is exceeded.

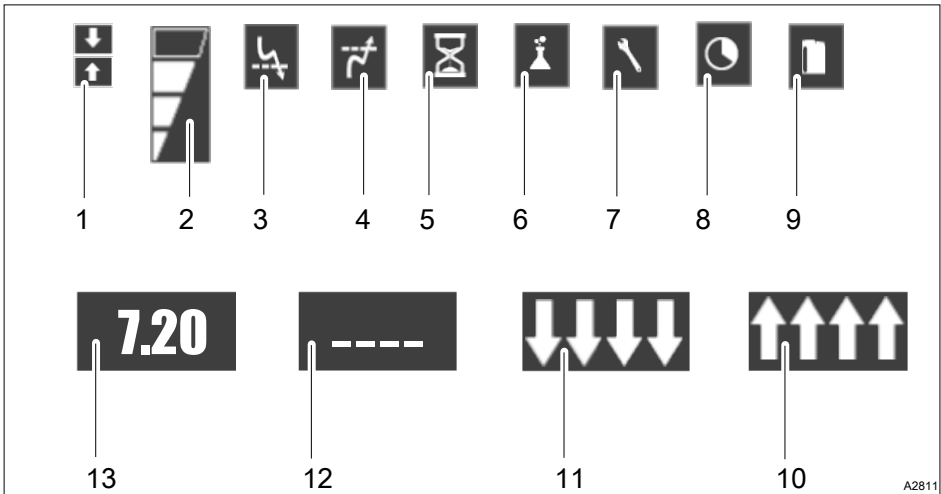
5.2 Displaying the details of a measuring channel



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Fig. 14: Displaying the details of a measuring channel

- 1 Name of the measuring channel
- 2 Metering running
- 3 Current measured value
- 4 Alarms display
- 5 Control direction



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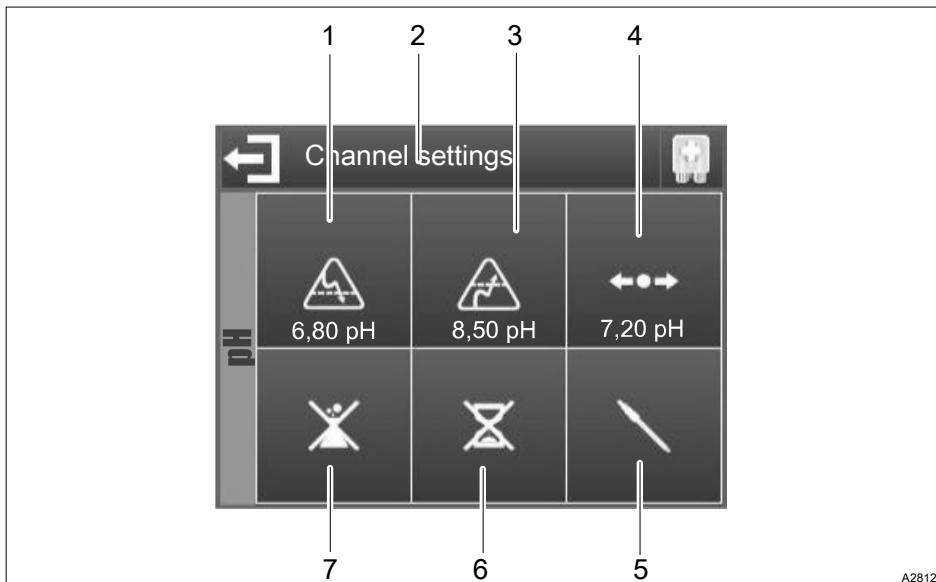
Fig. 15: Displaying the details of a measuring channel

- | | |
|--|--|
| <p>1 This symbol indicates the direction of the control (raise or lower) of the measuring channel.</p> <p>2 This symbol indicates the percentage metering level of the measuring channel. This example shows 75% metering.</p> <p>3 This symbol indicates whether the low alarm is active.</p> <p>4 This symbol indicates whether the high alarm is active.</p> <p>5 This symbol indicates whether there is a polarisation time delay.</p> | <p>6 This symbol indicates whether the over-metering alarm is active.</p> <p>7 This symbol indicates whether the sensor is calibrated or needs to be replaced.</p> <p>8 This symbol indicates whether the timer is active.</p> <p>9 This symbol indicates whether the “Fluid level, storage tank, low” alarm is active.</p> <p>10 Value is higher than the scale.</p> <p>11 Value is lower than the scale.</p> <p>12 Value is above the measuring range limit.</p> <p>13 Current measured value.</p> |
|--|--|

5.3 Measuring channel settings

Select the required measuring channel from the main screen to show this display.

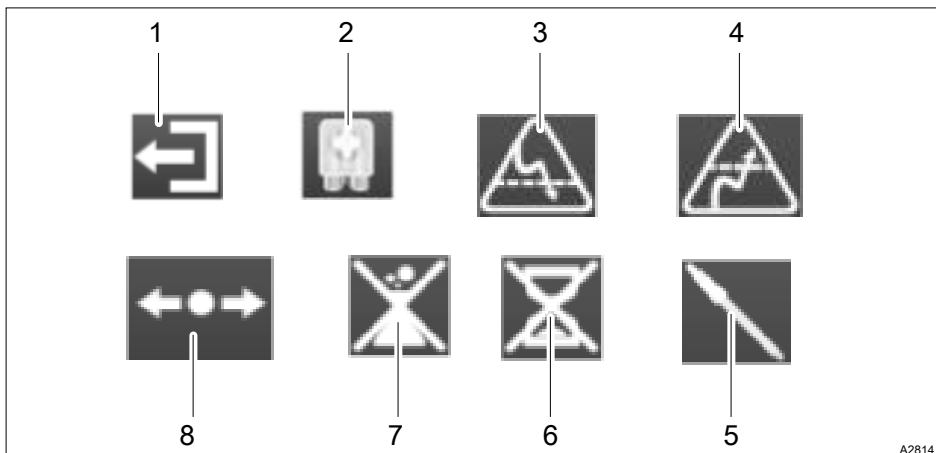
This configuration of the measuring channel takes effect when you close the screen and press the input and confirmation field. The parameters are not saved if the measuring channel configuration screen closes when the waiting time is exceeded.



A2812

Fig. 16: Measuring channel configuration screen: Measuring channel settings

- | | | | |
|---|----------------------------------|---|----------------------|
| 1 | Measured value lower limit alarm | 5 | Calibration |
| 2 | Measuring channel settings | 6 | Cancel polarisation |
| 3 | Measured value upper limit alarm | 7 | Cancel over-metering |
| 4 | Setpoint | | |

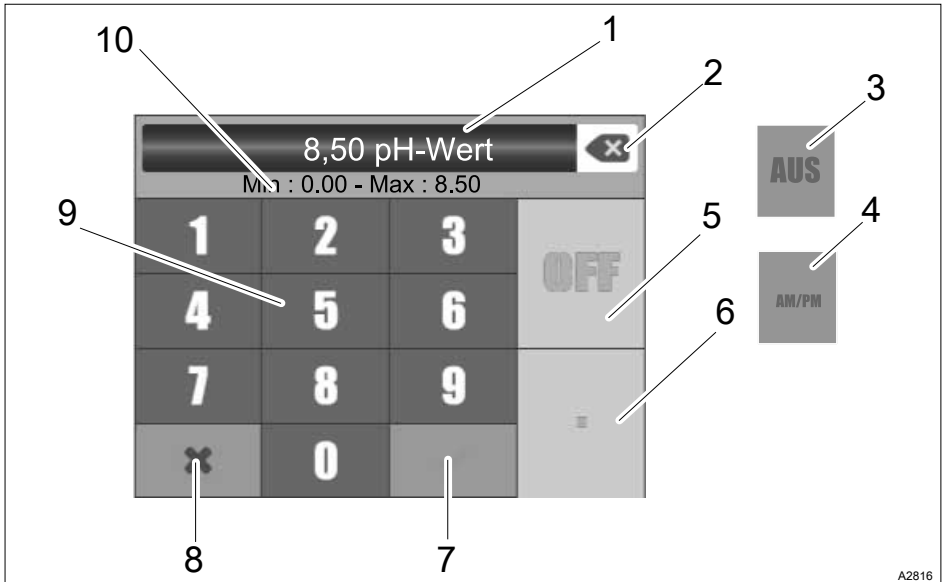


A2814

Fig. 17: Functional symbols

- | | | | |
|---|--|---|--|
| 1 | This key lets you exit this screen and save the new parameters of the measuring channel. | 5 | This key lets you calibrate the measuring channel. |
| 2 | This key lets the pump of the measuring channel prime. | 6 | This key lets you override the polarisation alarm of the measuring channel. |
| 3 | This key lets you set the measured value lower limit alarm of the measuring channel. | 7 | This key lets you override the over-metering alarm of the measuring channel. |
| 4 | This key lets you set the measured value upper limit alarm of the measuring channel. | 8 | This key lets you set the setpoint of the measuring channel |

5.4 Digit input screen



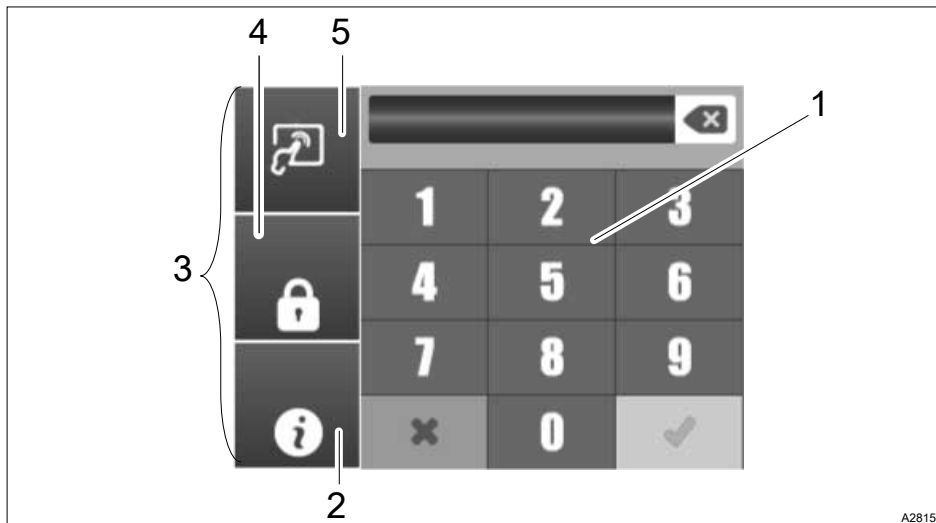
A2816

Fig. 18: Digit input screen

- | | | | |
|---|---|----|-----------------------------------|
| 1 | Display of the measured value. | 5 | Other function. |
| 2 | Back key. | 6 | Other function. |
| 3 | This key lets you deactivate a value, e.g. to deactivate a timer. | 7 | ENTER key. |
| 4 | The "AM/PM" key is used to set the 12-hour time format. | 8 | Cancel key. |
| | | 9 | Numerical keypad. |
| | | 10 | Display of possible limit values. |

5.5 Programming screen

Press the programming key in the main screen to display the programming screen.



A2815

Fig. 19: Programming screen

- 1 Key for the service code.
- 2 System information.
- 3 Adapting the interface.
- 4 Change the code.
- 5 Call up the interface.

5.6 Interface management

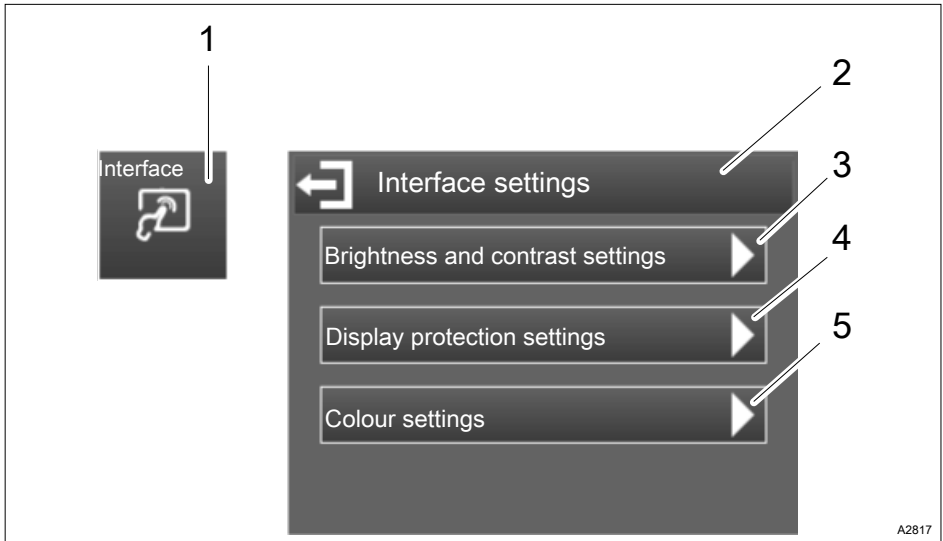


Fig. 20: Display settings (interface)

- | | |
|--|--|
| <p>1 This button opens the control interface configuration screen. Press this key to show the next screen.</p> <p>2 Control interface configuration screen</p> | <p>3 Brightness & contrast management</p> <p>4 Screen protection management</p> <p>5 Colour management</p> |
|--|--|

This screen lets you adjust the basic technical settings of the displays, such as colour management, contrast etc.

5.7 Changing the installation code

The most important control parameters are protected by an installation code (password). The standard code is "1234". You can change this code in three steps:

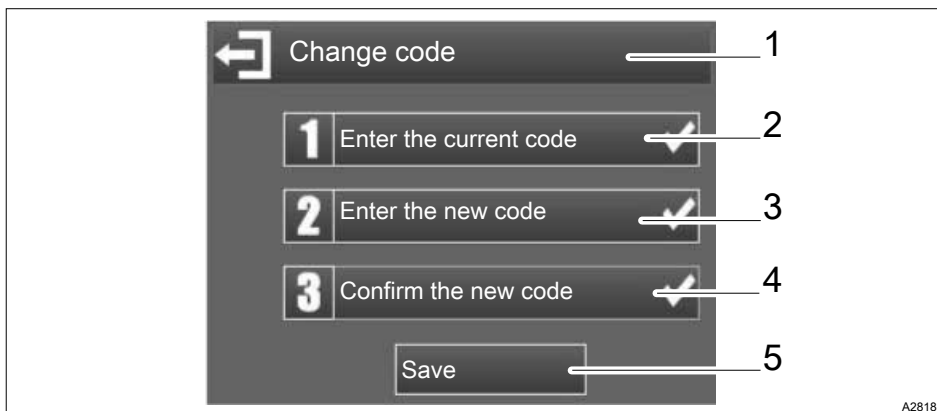


Fig. 21: Changing the installation code (password)

- 1 Password change
- 2 Enter current code
- 3 Enter new code
- 4 Confirm new code
- 5 Save

5.8 System information

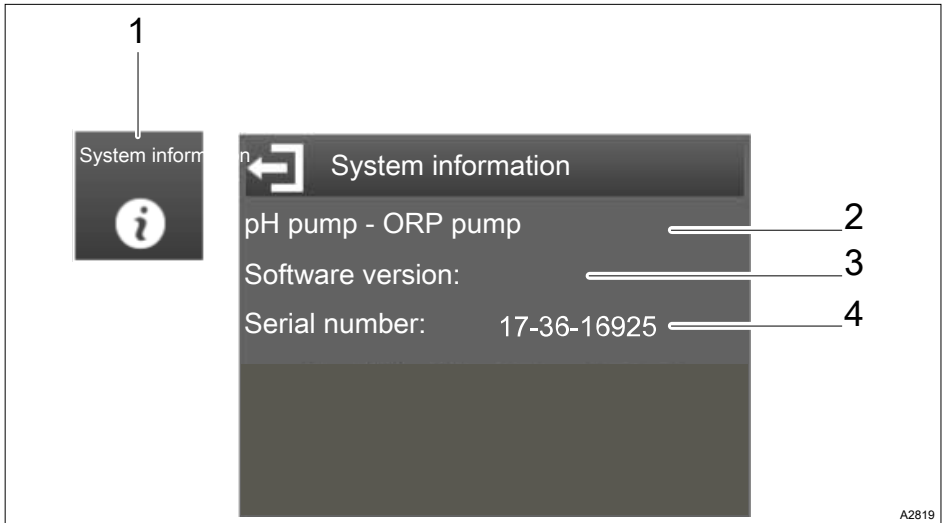
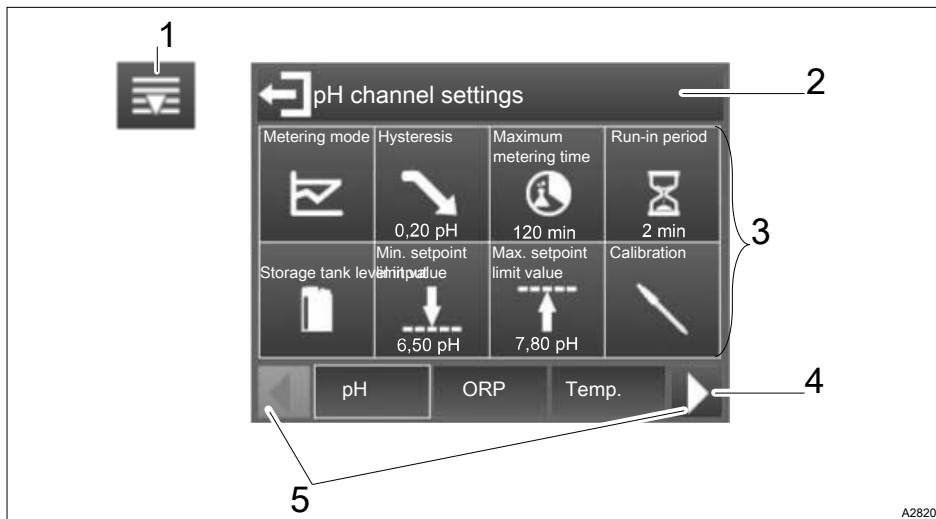


Fig. 22: System information

- 1 This button opens the control's system information screen. Press this key to show the next screen.
- 2 Product type
- 3 Software version
- 4 Serial number

You can view the firmware version of your control in this window. This information is useful when communicating with Service – have this information to hand when contacting Service. The last field (4) corresponds to the serial number of your control, which is identical to the serial number of the label on the outside of the housing.

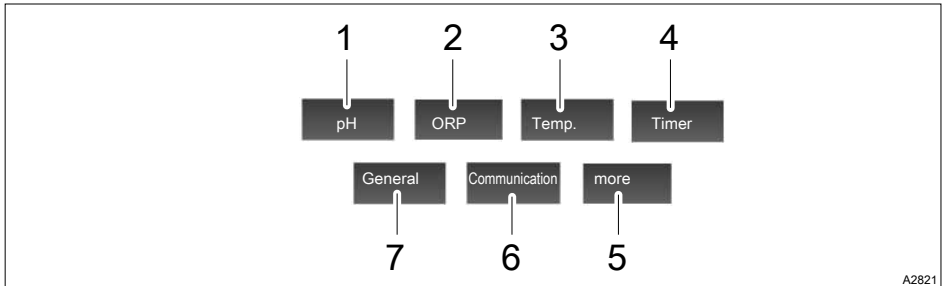
5.9 Installer level settings



A2820

Fig. 23: Illustrated by the pH channel settings

- 1 Access to the programming key.
- 2 Name of tab selected.
- 3 Selected tab settings.
- 4 Change to another tab.
- 5 Scroll keys.



A2821

Fig. 24: The tabs available are:

- | | | | |
|---|---|---|---|
| 1 | pH measuring channel settings: measuring mode, tank level etc. | 5 | Advanced controller settings: language, factory settings etc. |
| 2 | ORP measuring channel settings: measuring mode, tank level etc. | 6 | Communication control settings: speed, parity etc. |
| 3 | Temperature measuring channel settings: display, unit etc. | 7 | General control settings: remote input, metering direction etc. |
| 4 | Timer channel settings: start and end time. | | |

5.9.1 pH measuring channel settings

This screen is used to input the parameters for pH measurement.

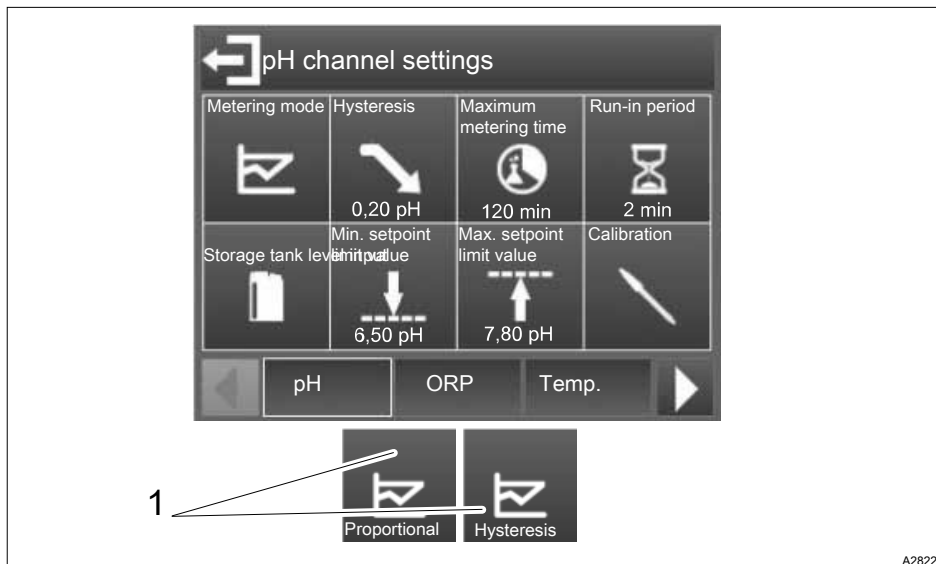


Fig. 25: pH measuring channel settings

- 1 This key is used to select the pH measuring channel control mode (proportional or hysteresis mode).

This key (1) is used to select the pH measuring channel control mode (proportional or hysteresis mode):

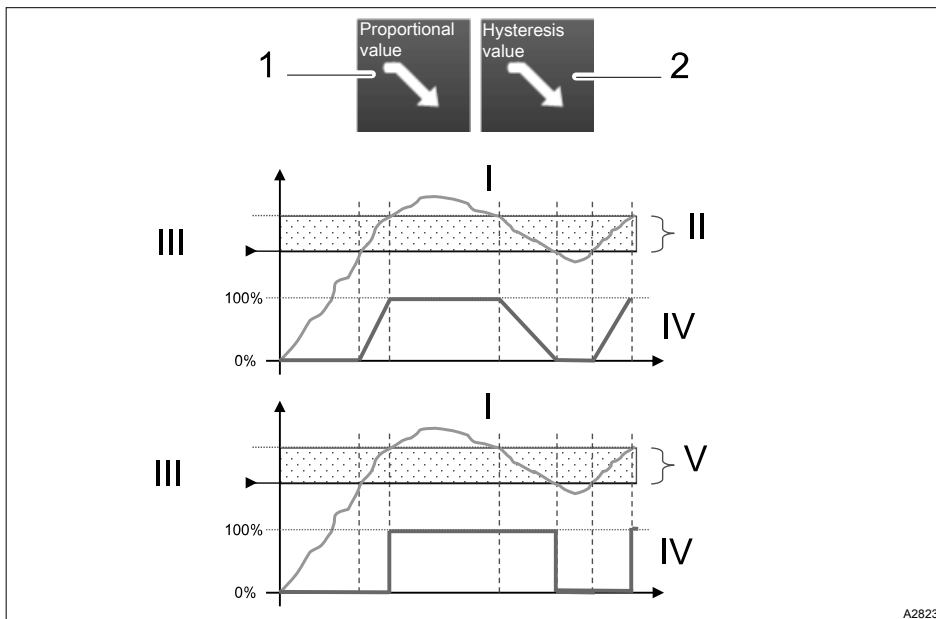
- Proportional mode is a linear calculation, with the drive control based on a single component, the proportional mode.
- Hysteresis mode is a two-point control, with the hysteresis value being the gap between the setpoint and the measured value.

If the measured value is above the highest point, then the control activates the falling actuator.

If the measured value is below the highest point, then the control activates the rising actuator.

The previous actuator remains active between the setpoint and the lowest or highest point.

pH measuring channel in downstream mode



A2823

Fig. 26: pH measuring channel in downstream mode

- | | | | |
|----|----------------------------------|-----|--------------|
| 1 | Proportional value, e.g. 0.20 pH | III | Setpoint |
| 2 | Hysteresis value, e.g. 0.20 pH | IV | Pump command |
| I | Measuring | V | Hysteresis |
| II | Proportional band | | |

If the feeder assembly of the pH measuring channel is configured in downstream mode, then this key is used to select the value of the proportional band (1) or the hysteresis value (2) depending on the type of control previously selected.

The control request is 100% if the error (setpoint measured value) in proportional mode is equal to the proportional range (II). Reducing the value of the proportional band increases the metering control for the same measured value.

If the error (setpoint measured value) in hysteresis mode is greater than the hysteresis value (V), then the control request is 100%.

pH measuring channel in upstream mode

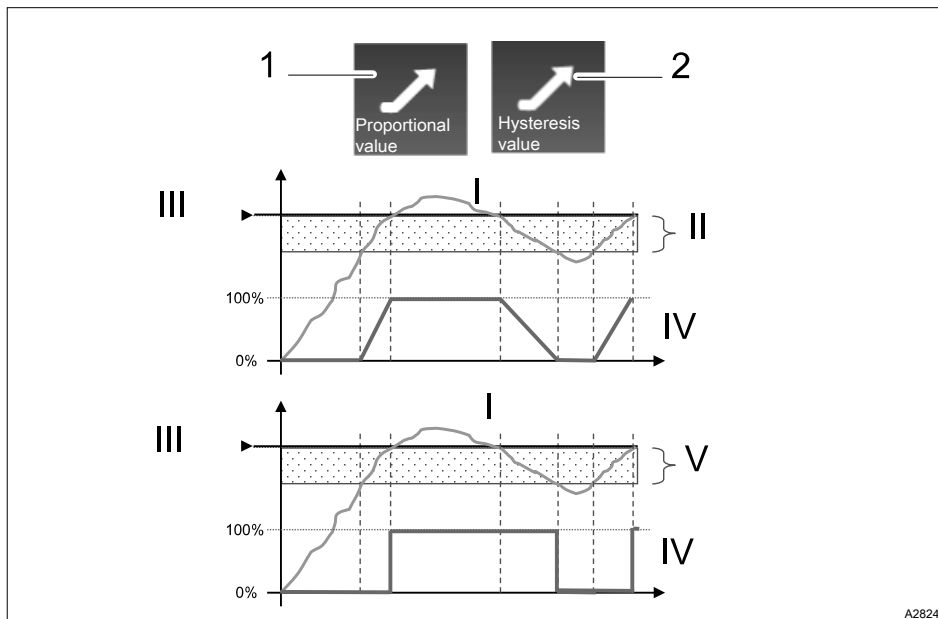


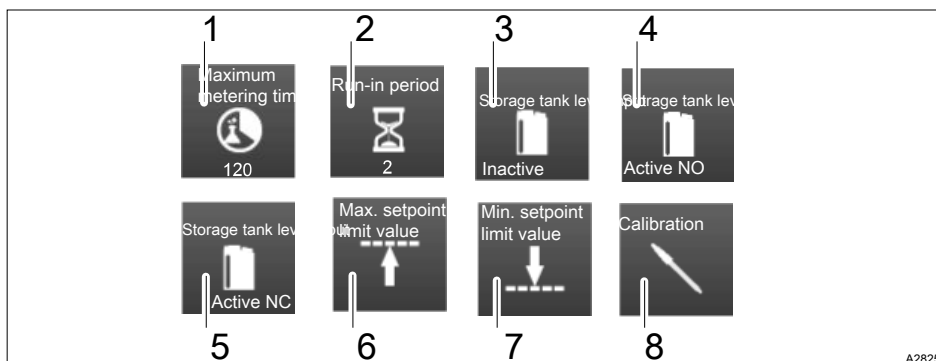
Fig. 27: pH measuring channel in upstream mode

- | | | | |
|----|-----------------------------------|-----|--------------|
| 1 | Proportional value, e. g. 0.20 pH | III | Setpoint |
| 2 | Hysteresis value, e.g. 0.20 pH | IV | Pump command |
| I | Measuring | V | Hysteresis |
| II | Proportional band | | |

If the feeder assembly of the pH measuring channel is configured in upstream mode, then this key is used to select the value of the proportional band (1) or the hysteresis value (2) depending on the type of control previously selected.

The control request is 100% if the error (setpoint measured value) in proportional mode is equal to the proportional range (II). Reducing the value of the proportional band increases the metering control for the same measured value.

If the error (setpoint measured value) in hysteresis mode is greater than the hysteresis value (V), then the control request is 100%.



A2825

Fig. 28: pH measuring channel settings

#	Function
1	This key is used to input a maximum period of use of the pump assigned to the pH sensor. This maximum time can be configured between 0 (disable or OFF) and 1440 minutes. If the period of use of the pump exceeds this time, then metering stops and is only restarted after the user has intervened. The user needs to cancel the alarm. A symbol appears on the main screen during this phase.
2	This key is used to input a start delay for the pH sensor of between 0 and 480 seconds. This delay is used to postpone the start of control and alarm processing once the unit has been started or the sensor disconnected. The symbol (⌚) appears on the main screen during this phase.
3	This key is used to activate or deactivate the "Tank level input". You can also select the direction of the NO or NC contact. A symbol appears on the main screen if this entry is detected.
4	
5	
6	This key lets you set the maximum setpoint of the pH measuring channel. You can enter the setpoint in user mode.
7	This key lets you set the minimum setpoint of the pH measuring channel. You can enter the setpoint in user mode.
8	This key lets you calibrate the pH measuring channel.

5.9.2 ORP measuring channel settings

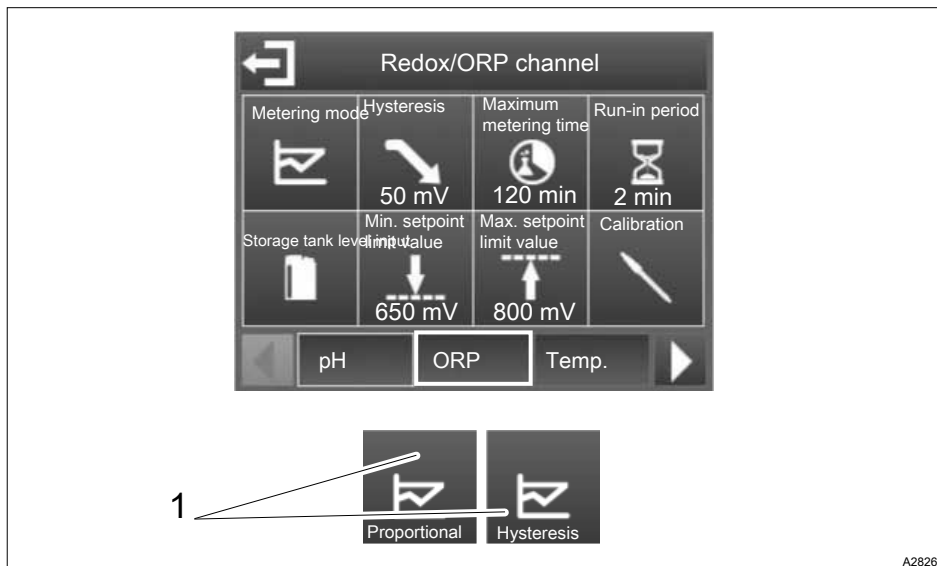


Fig. 29: ORP measuring channel settings

- 1 This key is used to select the ORP measuring channel control mode (proportional or hysteresis mode).

This key (1) is used to select the ORP measuring channel control mode (proportional or hysteresis mode):

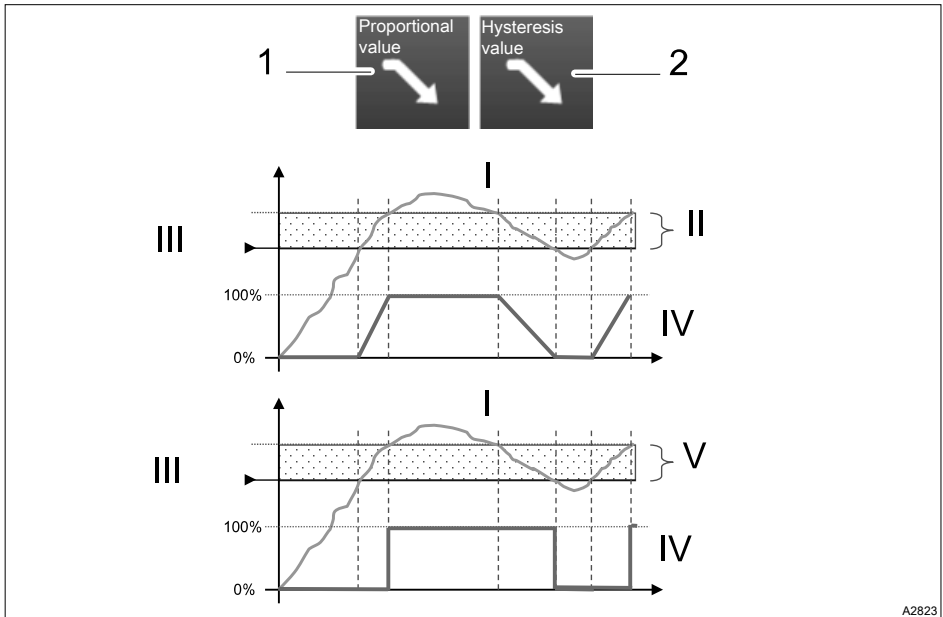
- Proportional mode is a linear calculation, with the drive control based on a single component, the proportional mode.
- Hysteresis mode is a two-point control, with the hysteresis value being the gap between the setpoint and the measured value.

If the measured value is above the highest point, then the control activates the falling actuator.

If the measured value is below the highest point, then the control activates the rising actuator.

The previous actuator remains active between the setpoint and the lowest or highest point.

ORP measuring channel in downstream mode



A2823

Fig. 30: ORP measuring channel in downstream mode

- | | | | |
|----|--------------------------------|-----|--------------|
| 1 | Proportional value, e.g. 50 mV | III | Setpoint |
| 2 | Hysteresis value, e.g. 50 mV | IV | Pump command |
| I | Measuring | V | Hysteresis |
| II | Proportional band | | |

If the feeder assembly of the ORP measuring channel is configured in downstream mode, then this key is used to select the value of the proportional band (1) or the hysteresis value (2) depending on the type of control previously selected.

The control request is 100% if the error (setpoint measured value) in proportional mode is equal to the proportional range (II). Reducing the value of the proportional band increases the metering control for the same measured value.

If the error (setpoint measured value) in hysteresis mode is greater than the hysteresis value (V), then the control request is 100%.

ORP measuring channel in upstream mode

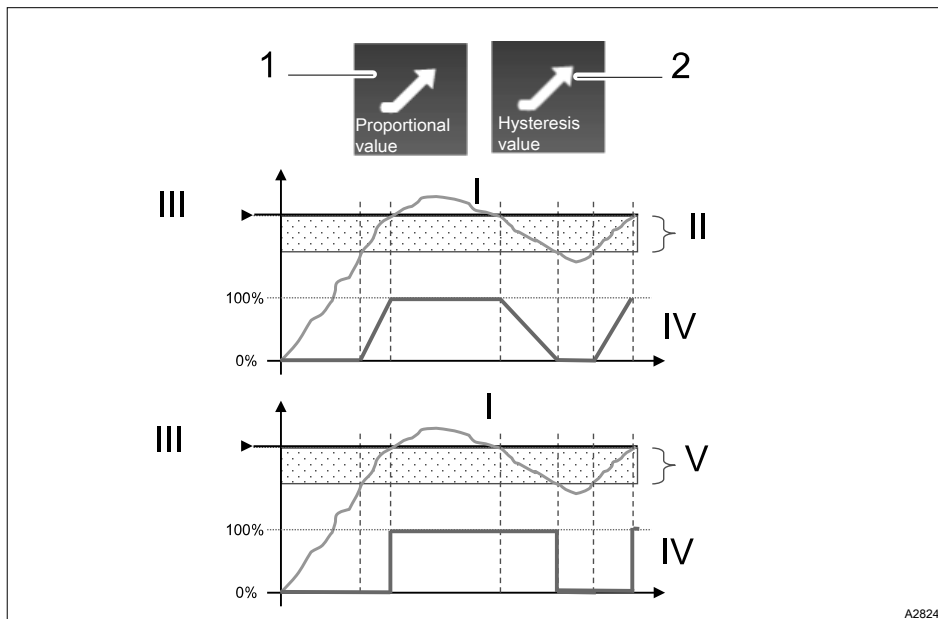


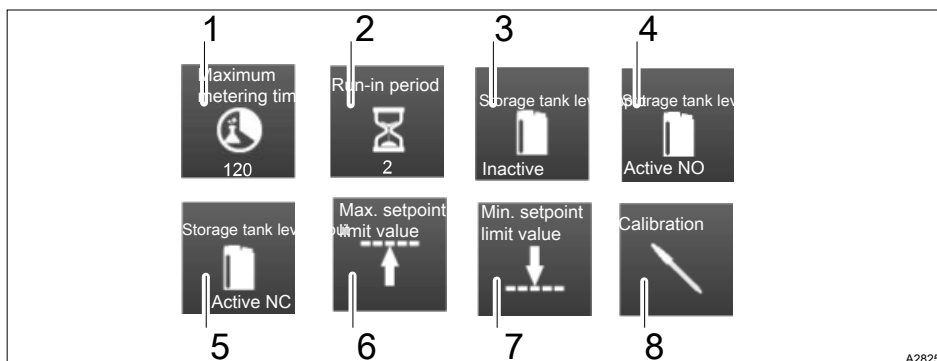
Fig. 31: ORP measuring channel in upstream mode

- | | | | |
|----|--------------------------------|-----|--------------|
| 1 | Proportional value, e.g. 50 mV | III | Setpoint |
| 2 | Hysteresis value, e.g. 50 mV | IV | Pump command |
| I | Measuring | V | Hysteresis |
| II | Proportional band | | |

If the feeder assembly of the ORP measuring channel is configured in upstream mode, then this key is used to select the value of the proportional band (1) or the hysteresis value (2) depending on the type of control previously selected.

The control request is 100% if the error (setpoint measured value) in proportional mode is equal to the proportional range (II). Reducing the value of the proportional band increases the metering control for the same measured value.

If the error (setpoint measured value) in hysteresis mode is greater than the hysteresis value (V), then the control request is 100%.



A2825

Fig. 32: ORP measuring channel settings

#	Function
1	This key is used to input a maximum period of use of the pump assigned to the ORP sensor. This maximum time can be configured between 0 (disable or OFF) and 1440 minutes. If the period of use of the pump exceeds this time, then metering stops and is only restarted after the user has intervened. The user needs to cancel the alarm. A symbol appears on the main screen during this phase.
2	This key is used to input a start delay for the ORP sensor of between 0 and 480 seconds. This delay is used to postpone the start of control and alarm processing once the unit has been started or the sensor disconnected. The symbol (⌘) appears on the main screen during this phase.
3	This key is used to activate or deactivate the "Tank level input". You can also select the direction of the NO or NC contact. A symbol appears on the main screen if this entry is detected.
4	
5	
6	This key lets you set the maximum setpoint of the ORP measuring channel. You can enter the setpoint in user mode.
7	This key lets you set the minimum setpoint of the ORP measuring channel. You can enter the setpoint in user mode.
8	This key lets you calibrate the ORP measuring channel.

5.10 Temperature measuring channel settings

This screen is used to input the parameters for the temperature measuring channel.

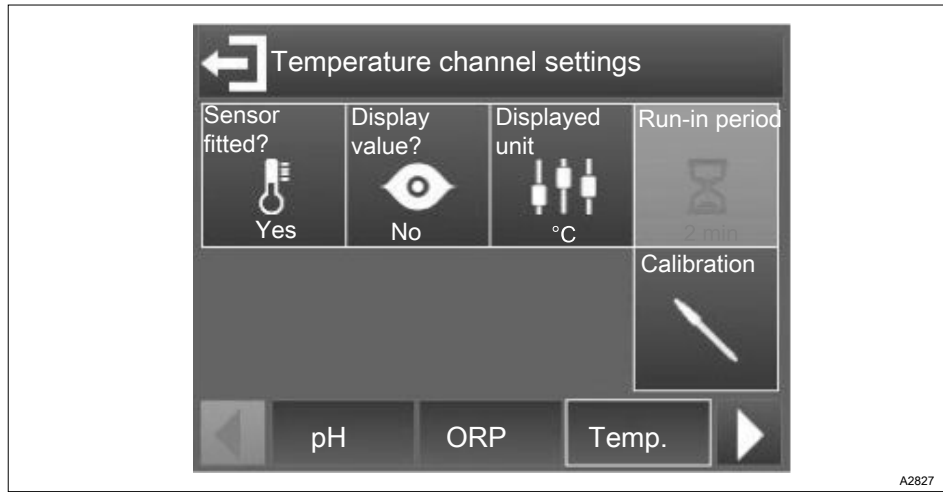


Fig. 33: Temperature measuring channel settings

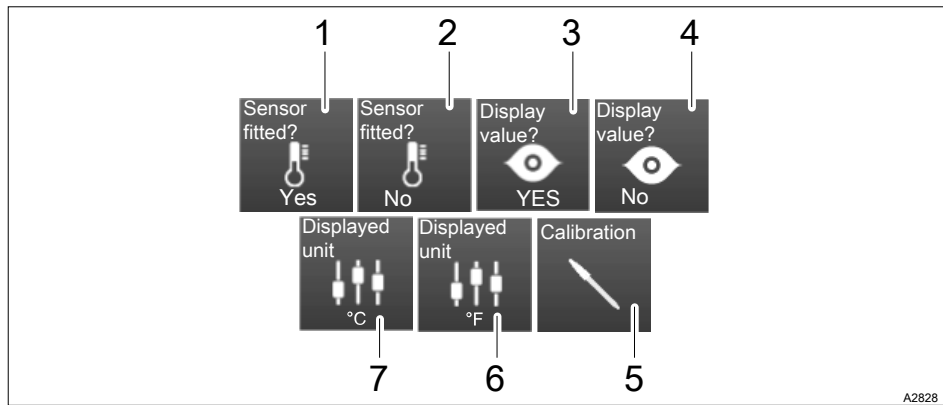


Fig. 34: Functions of the temperature measuring channel settings

#	Function
1	This function is used to activate or deactivate the temperature measurement.
2	
3	This function is used to activate or deactivate the display of the temperature value.
4	
5	This setting is used to select the unit of measurement °C or °F.
6	
7	This key is used to calibrate the temperature measuring channel.

5.11 Timer settings

This screen is used to define the operating slots of the relay. If a slot is running, then a clock symbol ⌚ appears in the notification bar.

You can program up to 8 different daily slots for each day of the week (Monday to Sunday) or up to 8 weekly slots (All).

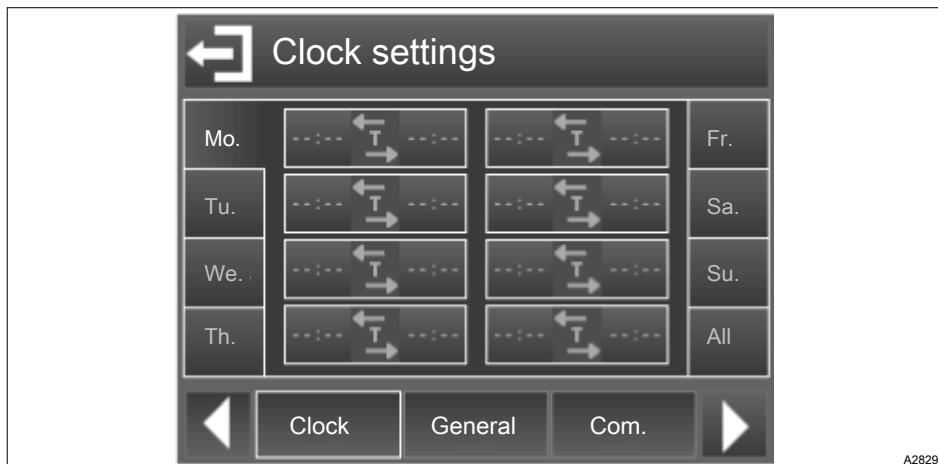


Fig. 35: Timer settings

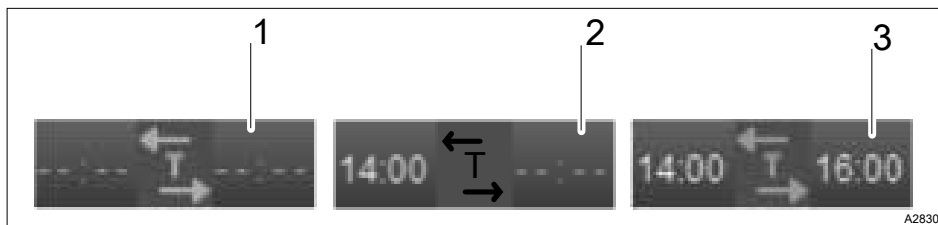


Fig. 36: Activating a slot.

- 1 The slot is deactivated.
- 2 The slot has a start slot but is not active (red).
- 3 The slot is activated (green). Example: The start time is 14:00 and the stopping time is 16:00.

The minimum slot time is 1 minute.

The maximum slot time is 24 hours.

5.12 General settings

The parameters of the remote control contact, flow meter contact, feeder assembly for the pH and ORP channels and pump cycle time for the pH and ORP channels can be set on this screen.

The remote control and flow switch inputs are designed so that a free potential can be connected.

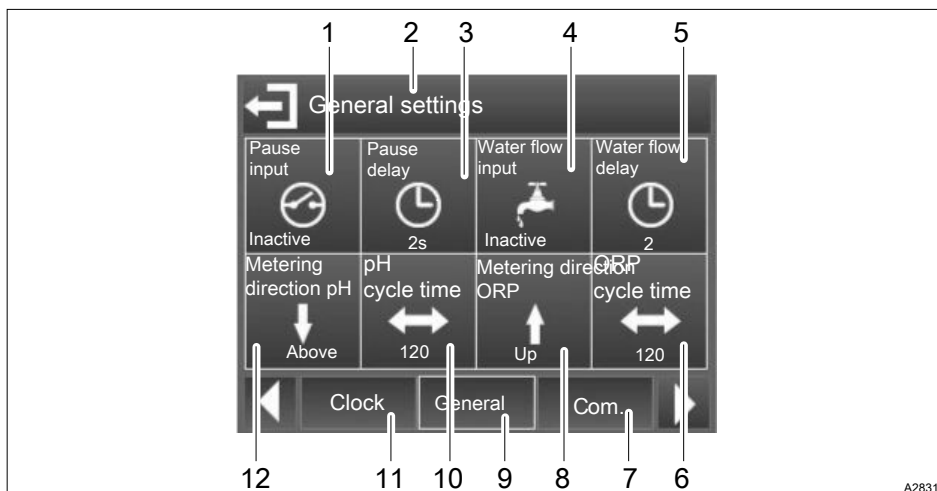
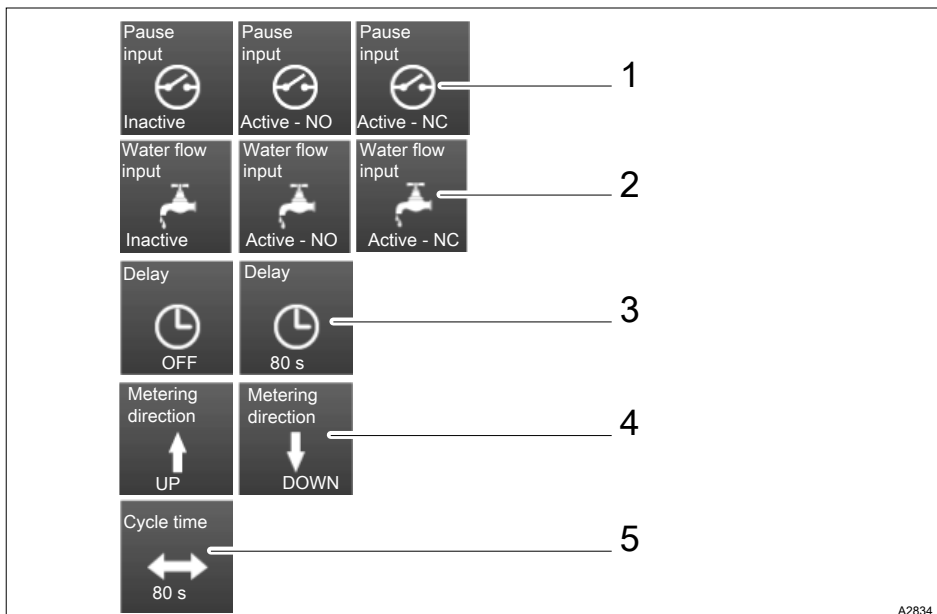


Fig. 37: General settings

- | | |
|--|------------------------------|
| 1 Remote operation: Active, Inactive, NC or NO | 6 ORP cycle time |
| 2 General settings | 7 Communication settings key |
| 3 Remote control delay: OFF or up to 240 seconds | 8 ORP metering direction |
| 4 Flow: Active, Inactive, NC or NO | 9 General settings key |
| 5 Flow delay: OFF or up to 240 seconds | 10 pH cycle time |
| | 11 Timer key |
| | 12 pH metering direction |



A2834

Fig. 38: General settings functions.

#	Functions
1	This key is used to activate or deactivate the <i>[Remote control contact]</i> input. This key also lets you select the direction of the NO or NC contact.
2	This key is used to activate or deactivate the <i>[Flow switch contact]</i> input. This key also lets you select the direction of the NO or NC contact.
3	This key is used to set the contact <i>[Delay]</i> input. The delay can be deactivated when the delay is set to <i>[OFF]</i> . The delay can be set to up to 240 seconds.
4	This key is used to set the <i>[Metering direction]</i> of the measuring channel. The metering direction can either be “upwards” or “downwards”.
5	This key is used to set the cycle time of the metering pump. This time can be set at between 10 ... 1800 seconds.

5.13 Communication settings

The communication parameters of the RS485 bus are set in this screen.

You can change the communication speed, parity and the Modbus slave address (slave ID) by selecting the respective key.

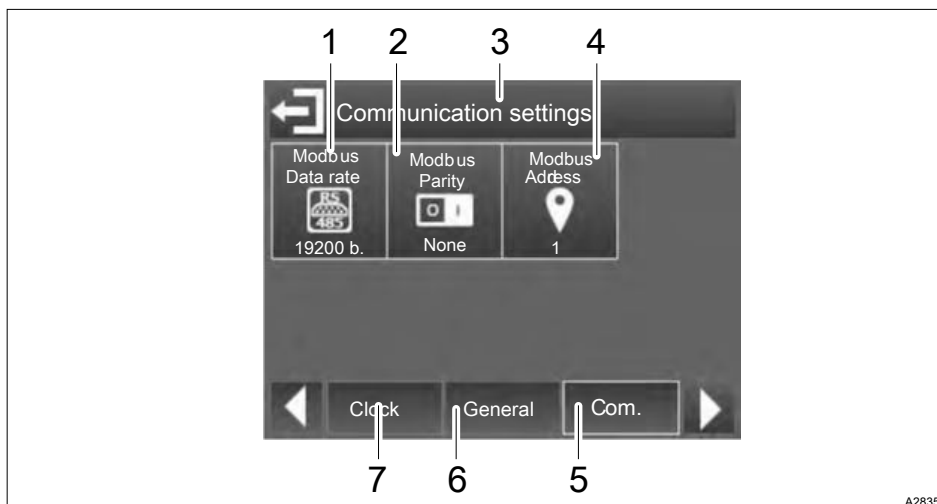


Fig. 39: Communication settings

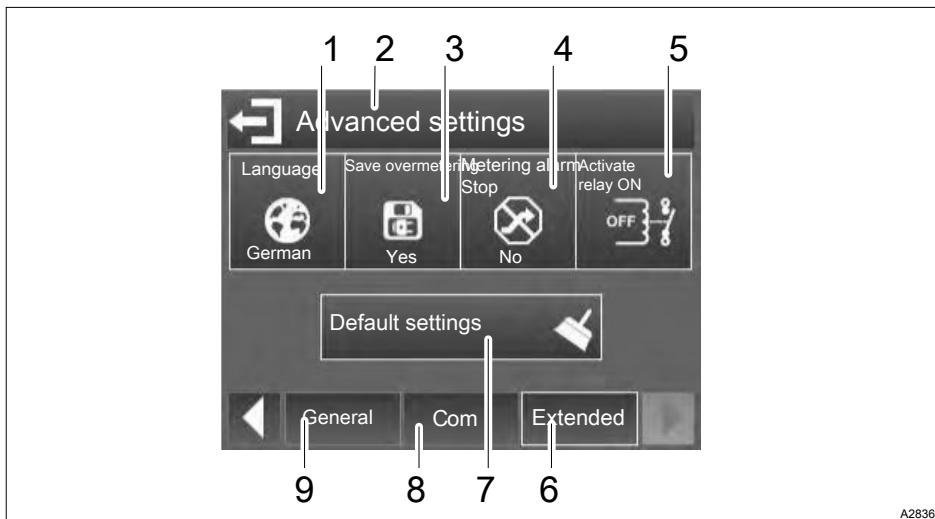
- | | | | |
|---|----------------------------|---|----------------------------|
| 1 | Modbus communication speed | 5 | Communication settings key |
| 2 | Modbus parity | 6 | General settings key |
| 3 | Communication settings | 7 | Timer key |
| 4 | Modbus address (slave ID) | | |

#	Function
1	Slave ID 1...247
2	Baud rate: 300, 1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200.
4	Parity: None, odd, even, none.

5.14 Advanced settings

This screen lets you adapt advanced unit settings.

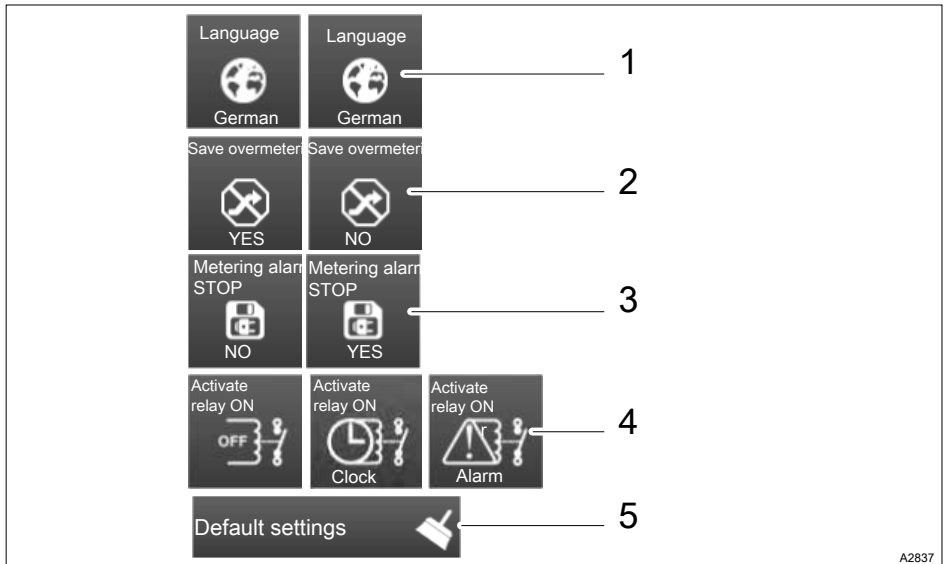
Factory setting: The device automatically restarts after a reset. The calibrated values are deleted so all your sensors need to be recalibrated.



A2836

Fig. 40: Extended settings (parameters)

- | | | | |
|---|------------------------------|---|------------------------------|
| 1 | Language settings | 6 | Advanced settings key |
| 2 | Advanced settings parameters | 7 | Restore factory settings key |
| 3 | Save over-metering | 8 | Communication settings key |
| 4 | Metering lock | 9 | General settings key |
| 5 | Timer or alarm relay | | |



A2837

Fig. 41: Advanced settings keys

#	Function
1	This key is used to set the language of the unit.
2	This key is used to activate or deactivate the alarm for daily overmetering of the back-up in the event of a power failure.
3	This key is used to activate or deactivate the metering lock if the device has a technical alarm (high or low alarm).
4	This key activates the command in the internally fed relay, with a timer or alarm.
5	This key restores all unit parameters to factory settings.

6 Calibrating the measuring channels

- **User qualification:** trained user  *Chapter 2.4 'User qualification' on page 15*

The automatic calibration of pH or ORP does not use a standard buffer. Measure the pH with reference units or chemical reagents prior to calibration.

Calibration needs the filter to be stopped and a cap fitted to replace the sensor to be calibrated.

Chemical reagents are not supplied to measure the pH value or ORP. Your pool specialist generally provides a colorimetric reagent for measuring the pH value of your pool water. Use this reagent and increase the actual value of your pool and compare it with the value displayed. Do not perform calibration if the measured value is close to +/- 0.1 pH. Values close to +/- 0.1 pH are not longer detected by the eye when they are read off.

6.1 Automatically calibrating the pH/ORP measuring channel

To automatically calibrate the pH value:

- Make sure that the sensor is not faulty or blocked,
- Allow filtration to run for several minutes,
- The pH value displayed needs to be stable between 5.5 and 8.5 pH
- Make sure that the metering pump is switched off,
- The actual pH value measured with your reagent or manual unit needs to be the actual value.
- On completion of calibration, your control will resume normal operation and display the altered pH value.

To automatically calibrate the ORP value:

- Make sure that the sensor is not faulty or blocked,
- Allow filtration to run for several minutes,
- The ORP value displayed needs to be stable between 200 mV and 900 mV.
- Make sure that the metering pump is switched off,
- The ORP value measured with your reagent or manual unit needs to be the actual value.
- On completion of calibration, your control will resume normal operation and display the altered ORP value.

1.  Press the key for the measuring channel to be calibrated (ORP or pH) and press "Calibrate" to automatically calibrate the pH or ORP value.

⇒ The calibration menu opens.

2.  Follow the instructions in the calibration menu.

6.2 Manually calibrating the pH/ORP measuring channel

The sensor to be calibrated needs to be dismantled from its fitting for calibration of pH or ORP using a standard reagent.

Calibration needs the filter to be stopped and a cap fitted to replace the sensor to be calibrated.

Chemical reagents are not supplied for calibration of pH/ORP, and neither is the cap supplied. You can order these materials from your dealer.

1. ➤ Stop filtration and close the shut-off valves.
2. ➤ Loosen the fixing nut of the sensor.
3. ➤ Remove the sensor from its seat and remove the seal
4. ➤ Insert the cap to seal the sensor location.
5. ➤ Open the shut-off valves and switch on filtration.
6. ➤ Rinse the sensor with clean water and without excessive pressure. Remove all dirt. Make sure that the sensitive tip of the sensor is not damaged.

pH 7 calibration

7. ➤ To calibrate the pH value, it is essential that you start with a liquid standard pH value = 7.00.

Calibration with pH = 7.00 may be sufficient for the swimming pool. After operation, check whether the pH value displayed by the measuring/control unit corresponds to the actual pH value of your pool. Carry out full calibration with pH = 4.00 if the values do not agree.

Insert the sensor into the standard reagent pH=7.00. Wait until the controller display has stabilised. Proceed as follows once the value has stabilised

8. ➤ Press the measuring channel to be calibrated and press "Calibrate" to calibrate the pH value 7. Select the tab pH 7 and confirm with a [Tick].

pH 4 calibration

9. ➤ To calibrate to pH 4, it is essential that you start by calibrating the standard liquid pH = 7.00.

Rinse the sensor with clean water and without excessive pressure before calibrating. pH = 4.00.

10. ➤ Insert the sensor into the standard reagent pH=4.00. Wait until the controller display has stabilised. Proceed as follows once the value has stabilised:
11. ➤ Press the measuring channel to be calibrated and press "Calibrate" to calibrate the pH value 4. Select the tab pH 4 and confirm with a [Tick].

465 mV ORP calibration

12. ➤ Place the ORP sensor into the 465 mV standard reagent. Wait until the display on the control has stabilised. Carry out the next process once the value has stabilised.
13. ➤ Press the ORP measuring channel and "Calibrate" to calibrate the 465 mV ORP value. Select the tab 465 mV and confirm with a [Tick].
14. ➤ Stop filtration and close the shut-off valves.
15. ➤ Replace the sensor into the sensor holder.
16. ➤ Open the shut-off valves and switch on filtration.

Restoring calibration

- Press the measuring channel to be calibrated and press "Calibrate" to restore the calibration value to the factory setting. Confirm Reset by pressing 3.

7 Commissioning

- **User qualification:** trained qualified personnel ➤ Chapter 2.4 'User qualification' on page 15



WARNING!

Danger from hazardous substances!

Possible consequence: Fatal or very serious injuries.

Please ensure when handling hazardous substances that you have read the latest safety data sheets provided by the manufacture of the hazardous substance. The actions required are described in the safety data sheet. Check the safety data sheet regularly and replace, if necessary, as the hazard potential of a substance can be re-evaluated at any time based on new findings.

The system operator is responsible for ensuring that these safety data sheets are available and that they are kept up to date, as well as for producing an associated hazard assessment for the workstations affected.

Once you have finished programming, you are now ready to start control and metering.

Starting control and regulation

- ➔ Press the Start button.
 - ⇒ The colour of the button changes from red to green.
- Control and regulation are now working.



Only operate the pump after proper installation.

Only operate the pump once the transparent cover has been screwed on.

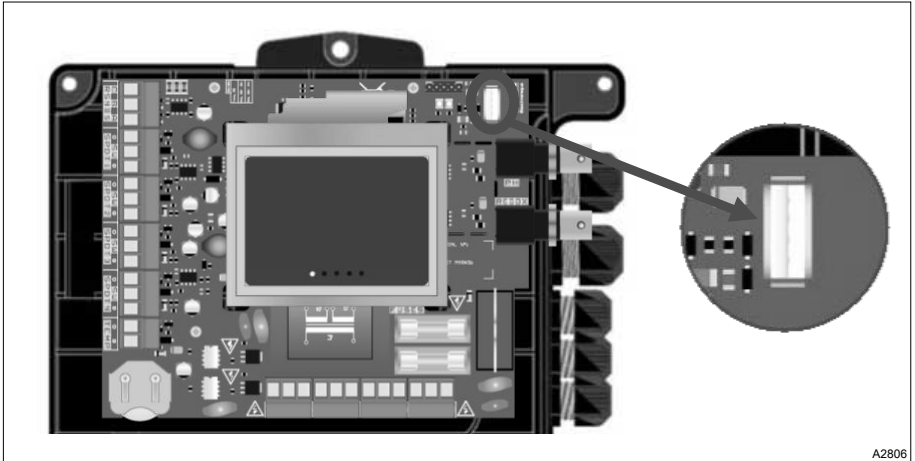
Filling the peristaltic pumps.

- ➔ Disconnect the discharge hose from the hose connector.
- ➔ Press to let the peristaltic pump run until the pump hose is filled.
- ➔ Switch off the peristaltic pump after the pump hose has been filled.
- ➔ Connect the discharge hose to the hose connector.
- ➔ Let the peristaltic pump run for a short time.
 - ⇒ The peristaltic pump is now ready for operation.
- ➔ Check the hose connectors and pipe system for leak-tightness.

8 Firmware update via the USB port

- **User qualification:** trained user ➔ *Chapter 2.4 'User qualification' on page 15*

You will find the latest firmware version on the unit manufacturer's homepage.



A2806

Fig. 42: USB port for connection of a USB mass storage device

1. ➔ Switch the device off.
2. ➔ Remove the front cover
3. ➔ Connect the USB stick.
4. ➔ Start up the unit.
5. ➔ Wait for the firmware update.
6. ➔ Refit the front cover.

9 Replacing the storage tank

- **User qualification:** instructed user
🔗 Chapter 2.4 'User qualification' on page 15

9.1 Replacing the chemical storage tanks



WARNING!

Danger from hazardous substances!

Possible consequence: Fatal or very serious injuries.

Please ensure when handling hazardous substances that you have read the latest safety data sheets provided by the manufacture of the hazardous substance. The actions required are described in the safety data sheet. Check the safety data sheet regularly and replace, if necessary, as the hazard potential of a substance can be re-evaluated at any time based on new findings.

The system operator is responsible for ensuring that these safety data sheets are available and that they are kept up to date, as well as for producing an associated hazard assessment for the workstations affected.



Labelling the chemical storage tanks

Label the connections on the unit, the metering accessories and the chemical storage tanks in such a way that it is impossible to mix up the storage tanks. It is the responsibility of the system operator to attach and maintain the labels. We can provide labels.

1. ➤ Ensure unrestricted access to the chemical storage tanks to be replaced so that you can work safely and keep escape routes free
2. ➤ Wear protective equipment as outlined in the material safety data sheets for the chemicals used
3. ➤ First replace one chemical storage tank and complete this task first
4. ➤ Handle and remove any spilt feed chemical as per the material safety data sheet
5. ➤ Only then replace the second chemical storage tank, if necessary, and complete this task first
6. ➤ Handle and remove any spilt feed chemical as per the material safety data sheet
7. ➤ Dispose of the empty chemical storage tanks as per the material safety data sheet

10 Troubleshooting

- **User qualification:** trained user ➔ *Chapter 2.4 'User qualification' on page 15*

Please contact Service if the external sensors are faulty.

Damage	Cause	Troubleshooting
The displays do not light up once the unit has been switched on. No lights are on.	Primary power unit faulty	Check the fuse in the primary power supply. Check the mains cable.
The sensors do not measure, or the displayed values are incorrect when the unit is switched on.	Sensor cable faulty. Faulty sensor	Check the sensor cable. Check the sensor connector. Replace the sensor.
The sensor displays a maximum value at all times.	Sensor cable faulty. Faulty sensor	Check your connections or replace the faulty sensor.
Continuing instability of the sensor.	Worn or faulty sensor. There is air in the filtration unit. External faults	Replace the sensor. Check filtration.
The sensor cannot be calibrated.	Worn or faulty sensor or unstable measurement	Change the sensor and check the basic filtration functions.
Problematic and unstable control.	Incorrect parameter setting	Check the program settings. Check the behaviour of the system and adjust the control parameters.

10.1 Troubleshooting

Fault	Cause	Remedy
The peristaltic pump no longer reaches full pump capacity	The pump hose has lost its elasticity	Replace the pump hose, see ➔ <i>Chapter 11.6 'Repair' on page 68</i>
In all other cases, notify your service technician or your ProMinent branch.		

11 Maintenance and repair

The control does not require special maintenance. Only allow repairs to be carried out by qualified technicians and only in our factory. Do not hesitate to contact Service if you experience problems with the control and/or the chemical sensors or need some operational advice.



WARNING!

Danger from hazardous substances!

Possible consequence: Fatal or very serious injuries.

Please ensure when handling hazardous substances that you have read the latest safety data sheets provided by the manufacture of the hazardous substance. The actions required are described in the safety data sheet. Check the safety data sheet regularly and replace, if necessary, as the hazard potential of a substance can be re-evaluated at any time based on new findings.

The system operator is responsible for ensuring that these safety data sheets are available and that they are kept up to date, as well as for producing an associated hazard assessment for the workstations affected.



WARNING!

Decontamination

Decontaminate the device before repairing the device or sending it for repair. To do so, remove all traces of hazardous substances. Refer to the Material Safety Data Sheet for your feed chemical.

You will find the current Decontamination Declaration to download on our homepage.

11.1 Changing the fuses

- **User qualification:** trained user ↗ *Chapter 2.4 'User qualification' on page 15.*



WARNING!

Live parts

Possible consequence: Fatal or very serious injuries

- Measure: Disconnect the mains plug prior to opening the housing
- De-energise damaged, defective units or units that have been tampered with by disconnecting the mains plug

Immediately disconnect the pump from the mains/power supply if the pump housing has been damaged. Only start up the pump again after it has been repaired by authorised personnel.

Make sure that the fault that has caused the fuse to trigger has been eliminated before changing the fuses.

You can replace the fuse (2) to protect the control and the fuse (1) to protect the pumps once the housing has been opened.

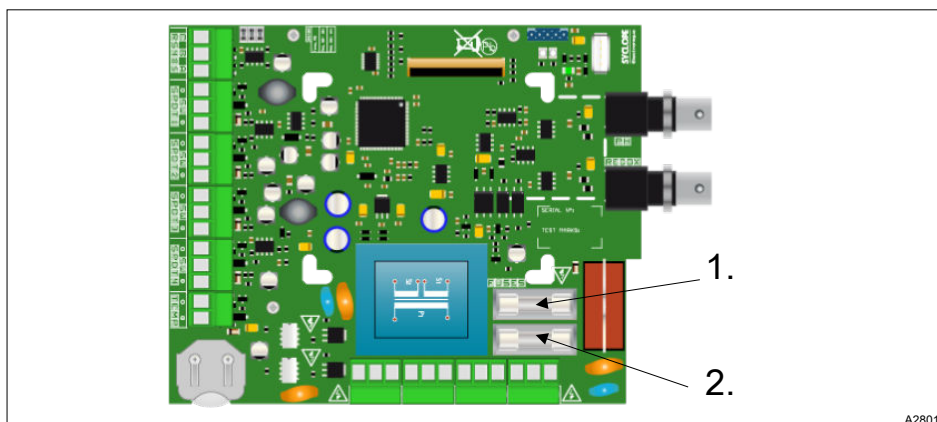


Fig. 43: Changing the fuses

- 1 F2
- 2 F3

Parameter	Specification(s)	Markings(s)
Electrical fuse	Glass fuse, 5x20 , slow-acting, 3.15 A	F2
	Glass fuse, 5x20 , slow-acting, 250 mA	F3

11.2 Maintenance of the sensors

pH and ORP sensors are maintenance-free and need to be replaced when they are no longer operating perfectly. Having said that, the good physical state of the sensors needs to be checked regularly.

1. ➔ Check whether there is dirt or residue on the heads of the sensors.
2. ➔ ☐ Do so by regularly calibrating the sensors and replace them when they can no longer be calibrated.
3. ➔ Remove the sensors during long operational pauses (e.g. over-wintering) and store the sensors in their original packaging. Do not forget to pour water, or even better water from the pool, into the sensor cover.

11.3 Maintenance

After extended periods of idleness

If the peristaltic pump has not pumped gaseous or adhesive feed chemicals for a longer period of time, checked whether the state of the hoses permits reliable operation.

Approx. every six months

Checks:

- Visual control of the liquid end
- Check the pump hose for leak-tightness
- Check the pump connectors for leak-tightness

Shorter maintenance intervals may be necessary depending on the feed chemicals used and operating conditions.

Approx. annually

Replace the pump hose.



This can lead to a reduction in pump capacity over time depending on the operating conditions. Therefore replace the pump hose earlier if necessary.

The power end is maintenance-free.

11.4 Maintenance of the system prior to the start of the season

- **User qualification:** trained user ⓘ Chapter 2.4 'User qualification' on page 15.

We recommend regular maintenance of the system prior to the start of the season. Maintenance should include:

- Functional control of the system.
- Maintenance of the pH and ORP sensors.
- Calibration of the pH and ORP sensors.
- Maintenance of both peristaltic pumps.
- Inspection and maintenance of the injection valves.
- Inspection and maintenance of the suction assemblies.
- The peristaltic pumps and the entire system need to be commissioned in accordance with the operating instructions.
- Checking of the values set on the Splash Control 2 controller.

Should you be considering switching the system over to other chemicals, then you need to ask advice and agree the compatibility of the chemicals with the system with the supplier of the system.

11.5 Decommissioning the Splash Control 2 controller

- **User qualification:** trained user ⓘ *Chapter 2.4 'User qualification' on page 15.*



No control and metering function

Following decommissioning of the Splash Control 2 controller, the swimming pool system will no longer be regulated and no chemicals will be metered. Provide for proper water hygiene if you wish to continue operating the swimming pool.

Decommissioning is possible at any time. Proceed as follows:

- 1.** ➤ Disconnect the system from the power supply.
- 2.** ➤ Shut off the sample water supply and return line.
- 3.** ➤ Depressurise all lines.
- 4.** ➤ Note the following: ⓘ *Chapter 12 'Operational pause (e.g. over-wintering)' on page 69*

11.6 Repair



Ensure that the system is at atmospheric pressure.

Drain the pump hose and thoroughly rinse it with a suitable medium.

Only turn the rotor in a clockwise direction.

Changing the pump hose

1. ➞ Loosen the suction hose and the discharge hose from the hose connectors
2. ➞ Loosen the fixing bolt on the transparent cover and remove the transparent cover
3. ➞ Remove the suction-side hose connector (left) from its mounting
4. ➞ Carefully pull the pump hose out under the rollers
5. ➞



When doing so, ensure that the rounded sides of the hose connectors are pointing towards the unit.

Insert the two hose connectors of the new pump hose into the two mountings.

6. ➞ Briefly switch on the motor. The pump hose moves into the correct position under the rollers
7. ➞ Replace the transparent cover on the housing and screw it into place
8. ➞ Fix the suction hose and the discharge hose to the hose connectors

12 Operational pause (e.g. over-wintering)

Never allow the sensors to remain dry in their fitting during operational pauses. Sensors need to be stored in a dry place and protected from moisture in their original packaging. You can obtain preservative for the sensors from your dealer. If you have no preservative, add swimming pool water to the sensor cover and store the sensors in their original packaging. The service life of the sensors depends on their use and care. They have a service life of 3 years with normal use. Their service life can be reduced to a few months with the use of poor preservative or abnormal use. The sensors will not function during the following season if these precautions are not taken.

The metering pumps also need to be preserved. Let clean water run through the pump hose. Disconnect and drain the hoses in the event of frost. Remove the pump hoses from the pump. The pumps will not function during the following season if these precautions are not taken.

13 Formal information and standards

13.1 Disposal of used parts

- **User qualification:** instructed user, see
🔗 *Chapter 2.4 'User qualification'*
on page 15

! NOTICE!

Regulations governing the disposal of used parts

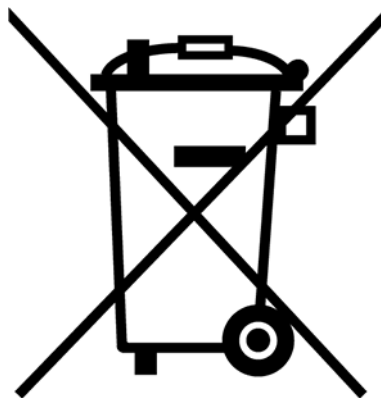
- Note the national regulations and legal standards that currently apply in your country

The manufacturer will take back decontaminated used devices providing they are covered by adequate postage.

Decontaminate the device before returning it for repair. To do so, remove all traces of hazardous substances. Refer to the Material Safety Data Sheet for your feed chemical.

A current Declaration of Decontamination is available to download on the ProMinent web-site.

Sign indicating EU collection system



In accordance with the European Directive 2012/19/EU on waste electrical and electronic equipment, this device features the symbol showing a waste bin with a line through it. The device must not be disposed of along with domestic waste. To return the device, use the return and collection systems available and observe the local legal requirements.

13.2 Standards complied with and Declaration of Conformity

The Declaration of Conformity for the controller is available to download on our homepage.

EN 61010-1 Safety requirements for electrical equipment for measurement, control and laboratory use – Part 1: General requirements

EN 61326-1 Electrical equipment for measuring, control and laboratory use – EMC requirements (for class A and B devices)

DIN EN 50581 - Technical documentation for the assessment of electrical and electronic products with regard to the restriction of hazardous substances

EN 60529 - Degrees of protection provided by enclosures (IP code)

14 Technical data

14.1 Technical data

Main features

Parameter	Specification(s)	Markings(s)
Consumption	850 W max - 3.5 A max.	-
Power supply requirements	230 VAC +/-10%, 50 Hz	-
Over-voltage category	II	-
Electrical fuse	Glass fuse, 5x20 , slow-acting, 250 mA	F3
	Glass fuse, 5x20 , slow-acting, 3.15 A	F2
Operating temperature (°C)	1 °C ... 40 °C	-
Maximum height of use	2000 metres above sea level.	
Housing material	ABS	-
Weight	1.8 kg	-
Display	Tactile LCD 320x240 with white backlight 3.5".	-
Surroundings		
Storage temperature (°C)	5°C ... 30°C	-
Air humidity	Max. 90% non-condensing	-
Degree of protection	IP 54	-
Enable	CE	-

Main features		
Parameter	Specification(s)	Markings(s)
Electromagnetic compatibility	Class B interruption tests correspond to EN61326-1 Class B interruption tests correspond to EN61326-2-6 Class B interruption tests correspond to EN55011 Harmonic tests according to EN61000-3-2-2 Harmonic tests according to EN61000-3-3-3 Interference immunity tests according to EN61000-4-2-2 Interference immunity tests according to EN61000-4-3-3 Interference immunity test according to EN61000-4-4-4-4 Interference immunity tests according to EN61000-4-5-5 Interference immunity tests according to EN61000-4-6-6 Note: If there are 45 ... 80 MHz inductive fields, then the output of the pH or ORP measurement can vary by 30%. Interference immunity tests according to EN61000-4-8-8 Interference immunity tests according to EN61000-4-11-11	-
Standard	EN 61000 Electromagnetic compatibility (EMC) EN 61326 Electrical equipment for measuring, control and laboratory use for a standard environment (class B home use)	-
Inputs		

Technical data

Main features

Parameter	Specification(s)	Markings(s)
Measuring inputs	1x potentiometric (pH) 0 ... 14 pH. 1x potentiometric (ORP) 0 ... +1000 mV. 1x RTD (4...20mA) -5 ... 45 °C.	PH ORP TEMP
Control or flow inputs	1x remote input in "Control On/Off" Control 1x flow switch detection	SPDT1 SPDT4
Floor tank	1x inlet floor tank for pH measuring channel 1x floor tank inlet for ORP measuring channel	SPDT2 SPDT3

Outputs

Relay	1x current relay, mains power supply contact 250 mA / 230 VAC	RELAY
Pumps	2x current relay, mains power supply contact 250 mA / 230 VAC	PUMP1 PUMP2

Pump types

Pumps	Metering pumps with 4 different feed rates: 0.4 l/h, 0.8 l/h, 1.6 l/h, 2.4 l/h, Acid- and oxidation-resistant pipes.	
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Communication

Main features		
Parameter	Specification(s)	Markings(s)
RS485	1x RS485 communication connector	RS485
USB	1x USB slot for the connection of a USB mass storage device	USB

Sound pressure level

Sound pressure level < 70 dB in line with DIN
EN 12639

14.2 Spare parts

Tab. 3: Spare parts for the Splash Control 2

Component	Order number
Pump hose, PHARMED®	1009480
Transparent cover, DF2a	1007736
Roller bearing in a transparent cover	1017985
Rotor	1009478
Union nut	1009968
Adapter G1/4 - M20x1.5	1044908
O-ring for adapter, 4.5 - 3.0, VITON®	1044910
Connector kit, simple, 10x4	1002589

Tab. 4: Spare parts for accessories

Component	Order number
pH sensor, PHES-112-SE SLg100	1051745
ORP sensor, RHES-Pt-SE SLg100	1051746
Suction lance with level switch, 3-pin, 2 m, Ø50-Ø 6 PCB	802077
Injection lance, short, complete, R 1/2 PCB	1028363
Cap for SN 6 socket	802431
Spud clamp, Ø50 x 1/2", PN10, PP	1082685
Buffer solution, ORP, 220 mV, 50 ml	506244
Buffer solution, pH 7, green, 50 ml	506253
Buffer solution, pH 4, red, 50 ml	506251

15 Appendix

15.1 EC Declaration of Conformity for Machinery

In accordance with DIRECTIVE 2006/42/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL, Appendix I, BASIC HEALTH AND SAFETY REQUIREMENTS, section 1.7.4.2. C.

We,

- ProMinent GmbH
- Im Schuhmachergewann 5 - 11
- D - 69123 Heidelberg, Germany,

hereby declare that the product specified in the following complies with the relevant basic health and safety rules of the EC/EU Directive, on the basis of its functional concept and design and in the version marketed by us. Any modification to the product not approved by us invalidates this declaration.

Tab. 5: Extract from the EC Declaration of Conformity

Designation of the product:	Splash Control 2
Serial number:	see nameplate on the device
Relevant EC Directives:	EC Machinery Directive (2006/42/EC) EU EMC Directive (2014/30/EU) Compliance with the protection targets of the Low Voltage Directive 2014/35/EU according to Appendix I, No. 1.5.1 of the Machinery Directive 2006/42/EC EU RoHS Directive (2011/65/EU)
Harmonised standards applied, in particular:	EN 61010-1: 2010 EN 61010-2-030: 2011 IEC 60529: 2013 + NF EN 60529: 1992 + A1: 2000 + A2: 2014 EN 61326-1: 2013 EN 61000-3-2 EN 61000-3-3 EN 50581: 2013
Place/date:	Heidelberg, DD.MM.YYYY

The EC Declaration of Conformity is available to download on our homepage.

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