

MAGella Side Stream Filter

Bypass filtration



in!ex

1	Introduction	6
1.1	MAGella Side Stream Filter	6
1.2	Terms of Use	6
1.3	Target group	7
1.4	Conventions	8
1.5	Manufacturer address	9
2	Safety instructions	10
2.1	General instructions	10
2.2	Intended Use	10
2.3	Non-intended use	12
2.4	Dangers during transport and installation	12
2.4.1	Transportation	12
2.4.2	Installation	12
2.5	Dangers during operation and maintenance	13
2.5.1	Mechanical hazards	13
2.5.2	Dangers from hot surfaces	14
2.5.3	Dangers from electricity	14
2.5.4	Dangers when handling the circulation pump	15
2.6	Personal protective equipment	16
2.7	Warning and information signs	16
3	Side Stream Filter Description	17
3.1	The MAGella Side Stream Filter at a glance	18
3.2	Side Stream Filter Details	19
3.3	Circulation water inlet	20
3.4	Differential pressure detection	20
3.5	Recirculation pump	20
3.6	Outlet circulating water	20
3.7	Display with control panel	20
3.8	Magnetite separator MAGella twister10	20

4	Operation	21
4.1	Preparing the Side Stream Filter for Operation	21
4.2	Connecting and operating side stream filters	21
4.3	Water values to be observed for the operation of the Side Stream Filter	21
4.4	Touchscreen operation	22
4.5	Main menu	22
4.5.1	Start system	23
4.5.2	Operating mode	23
4.5.3	General information	23
4.6	Settings	24
4.6.1	Normal operation	25
4.6.2	Continuous operation	26
4.6.3	Operating parameters	27
4.6.4	Change language	28
4.6.5	Component test	28
4.6.6	Remote control	29
4.7	Error menu	30
4.8	Quick access	31
4.8.1	Statistics	31
4.8.2	Quick settings	32
4.8.3	Display	33
5	Modbus-RTU	34
5.1	MODBUS RTU connection settings	34
5.2	Discrete Inputs Register 2 [read]	35
5.3	Single Coils Register 5 [write]	35
5.4	Input Register 4 [read]	36
5.5	Holding Register 6 [write]	36
5.6	Occupancy plan	37
5.7	Fault contact SSF	37
6	Maintenance and repair	38
6.1	Maintenance schedule	38
6.2	Maintenance/Cleaning MAGella twister10	39
6.3	Regular internal audit	39
6.4	Spare parts and accessories	40

7	Transport, installation and commissioning	42
7.1	Transportation	42
7.2	Installation and commissioning	42
8	Dismantling and disposal	45
8.1	Specialist personnel	45
8.2	Removal	46
8.3	Disposal	46
9	Technical data	47
9.1	Dimensional drawings	47
9.2	General data	48
9.3	Components	49
9.3.1	Recirculation pump	49
9.3.2	MAGella twister10	49
List of figures		
Figure 3-1:	Overview of the components of the Side Stream Filter	18
Figure 3-2:	Overview of the components of the Side Stream Filter	19
Figure 6-4:	Spare parts MAGella Side Stream Filter	40
Figure 7-2:	Connection diagram bypass method	43

1

Introduction

1.1 MAGella Side Stream Filter

The MAGella Side Stream Filter is a device for the permanent filtration of water using the bypass process in heating systems. The side stream filter performs the following tasks:

- Deposition of magnetite
- Fine filtration of non-magnetic particles down to 1µm

The MAGella Side Stream Filter is designed for permanent connection to heating systems.

Improper use of the Side Stream Filter may compromise personal safety and result in poor quality process results.

Please read this manual carefully and take note of the information on safety, operation and maintenance.

1.2 Terms of Use

To use the Side Stream Filter properly, please note the following instructions:

- Before starting work, make sure that the heating system complies with the local design and installation standards.
- Observe the regulations regarding the construction, commissioning, design and filling of heating systems.
- Do not use the Side Stream Filter for filling or refilling.
- The manufacturer guarantees compliance with the guideline values up to a water:glycol mixture of 50:50.

1.3 Target group

This operating manual is intended for persons who work with or on the Side Stream Filter:

- Operating personnel
- Maintenance and repair personnel

Qualifications of the target group

The target group of the operating instructions must have at least the following qualifications:



- Operating personnel: **Instructed person**
A trained person is someone who is informed about the assigned tasks and the possible dangers of improper conduct
 - taught,
 - trained if necessary and
 - was instructed about the necessary safety equipment and protective measures.
- Maintenance and repair personnel: **professional**
A skilled worker is someone who, based on professional training, knowledge and experience as well as knowledge of the relevant regulations, can assess the assigned work and recognise possible hazards.

1.4 Conventions

Warnings and other information

In the operating instructions, notes are given different weightings and marked with a Pictogram marked.

Warnings are structured as follows:

Symbol	Signal word	Meaning
	DANGER	Warning: Imminent danger. Can result in Death or The result is severe injuries.
	WARNING	Warning: Potentially dangerous situation. Can result in Death or severe injuries. be the result.
	CAUTION	Warning: Potentially dangerous situation. Can result in slight or minor injuries. <u>can</u> be the result.
	A NOTICE	Note: Instructions that must be taken into account for optimal results and safe operation of the system.

- **Signal word**
Indicates the severity of the danger.
- **Nature and source of danger**
Indicates which danger is being warned about and where it may occur.
- **cause and effect**
Describes what caused the danger or damage and its impact.
- **remedy**
Describes how the danger can be prevented from occurring.

Example of a warning



DANGER

Risk of injury if used improperly

Improper use of the MAGella Side Stream Filter can result in danger to persons and property.

- Use the Side Stream Filter only as intended as described below.
-

Instructions for action

Instructions are numbered to indicate the order of the individual steps. Results of actions (if any) are shown directly below.

Example:

- 1** This is the first step.
- 2** This is the second step.
 - ▶ This is the result of the second step.

Operating and control elements

See "4 Operation" on page 21.

1.5 Manufacturer address

UWS Technologie GmbH

Sudetenstrasse 6
91610 Insingen
GERMANY

Internet : www.uws-technologie.de
e-mail : info@uws-technologie.de
phone : +49 9869 91910-0
fax : +49 9869 91910-99

2

Safety instructions

The MAGella Side Stream Filter has been designed and manufactured in compliance with applicable legal regulations and recognized safety standards. The Side Stream Filter corresponds to the state of the art at the time of its initial commissioning. However, dangers can arise for the operator, for other persons, for the Side Stream Filter itself and for other material assets.



A NOTICE

To use the Side Stream Filter safely, please observe the safety instructions in this section and the warnings in other sections of this operating manual.

2.1 General instructions

The Side Stream Filter may only be installed, operated and maintained by qualified personnel who have received safety training.

Persons involved in the commissioning, operation, maintenance, repair, dismantling and disposal of the Side Stream Filter must have read and understood the operating instructions and in particular the safety instructions.

The operating instructions must be kept carefully and be available at all times to persons working with or on the Side Stream Filter.

2.2 Intended Use

To use the Side Stream Filter as intended, it is necessary to be familiar with the operating instructions and to comply with all the instructions, maintenance and inspection regulations contained therein.



DANGER

Danger to life or risk of serious injury

Mechanical and electrical hazards occur when operating the Side Stream Filter. To prevent personal injury due to these hazards, you must use the Side Stream Filter only as intended.

The Side Stream Filter may only be used as intended for these tasks:

For magnetite filtration and fine filtration.

The following additional provisions apply:

- **Heating systems**

The Side Stream Filter tends to be designed for larger systems, for a connection size of 1 1/2" (see section "10 Technical data" on page 48).

- **Operation**

The Side Stream Filter may only be operated and maintained by persons who are sufficiently qualified and authorized.

- **Safety devices**

The operation of the Side Stream Filter is only permitted with intact safety devices. Safety devices must be checked regularly for correct condition and proper functioning must be checked.

- **Maintenance and repair**

The general inspection and cleaning work must be carried out by trained persons. Maintenance, servicing and repair work may only be carried out by qualified specialists.

2.3 Improper use

The Side Stream Filter may only be used in the manner described in section “2.2 Intended use” on page 10. Any use other than that specified may result in danger to persons and property and is prohibited.

Improper uses include:

- Use for purposes other than filtering water
- Operation in potentially explosive areas in accordance with the ATEX Directive
- Operation with defective or missing safety devices
- Maintenance and repair in the absence of safety equipment without increased safety measures
- Operation by unqualified or insufficiently qualified personnel

2.4 Dangers during transport and installation

2.4.1 Transport

During transport and installation of the Side Stream Filter, hazards may arise from heavy and tipping parts. To avoid this, please observe the following safety instructions:

- Transport the Side Stream Filter without impact or shock.
- During transport, secure the Side Stream Filter using suitable means to prevent it from tipping or falling over. Do not remove any transport safety devices until after installation.

2.4.2 Installation (as in 'to install')

The Side Stream Filter may only be installed by authorized and trained specialists. Improper installation may result in injury. To avoid this, please observe the following safety instructions:

- Do not place heavy objects on the Side Stream Filter.
- Place the Side Stream Filter on a level and sufficiently stable surface.
- Use an omnipolar switch with a minimum distance of 3 mm between the contacts to connect the Side Stream Filter to the power supply.

- Install a highly sensitive differential switch (FI switch 0.03 A) as additional protection against electric shock.
- Lay electrical cables and hoses so that there is no tripping hazard.
- If tripping hazards cannot be avoided, mark them clearly.
- Carry out adjustments or simple repairs in consultation with the manufacturer.
- Do not make any modifications to the Side Stream Filter or the water and power lines.
- Position the Side Stream Filter so that the circulation pump motor is adequately ventilated.
- If the power supply is interrupted while the Side Stream Filter is operating, the device will not automatically return to the original mode when the power supply is restored. Instead, the operating mode must be reset manually.

2.5 Hazards during operation and maintenance

2.5.1 Mechanical hazards

The side stream filter consists of moving or heavy components. This can cause injury to people. To avoid this, please observe the following safety instructions:

- Be careful when replacing heavy parts:
 - Wear suitable safety shoes.
 - Secure the Side Stream Filter against tipping or slipping.
- When carrying out maintenance work on supplied components, please observe the relevant documentation from the relevant manufacturers.
- Do not place your hands near rotating or moving parts of the Side Stream Filter while it is in operation.

2.5.2 Dangers from hot surfaces

Parts of the side stream filter heat up during operation. There is a risk of burns if there is direct contact with hot surfaces. To avoid this, please observe the following safety instructions:

- Do not touch hot pipes or the housing of the circulation pump when the Side Stream Filter is switched on, only after it has been switched off and cooled down.
- Wear suitable protective gloves when touching or working on hot parts.

2.5.3 Dangers from electricity

The side stream filter is operated with electrical current. Touching live components can result in serious injury or death. To avoid this, please observe the following safety instructions:

Disconnect the main power supply before working on electrical equipment

- Disconnect the main power supply before working on electrical equipment.
- Make sure that the power cable is equipped with an appropriate locking device for maintenance purposes (lockout-tagout).

Liquids

- Be careful when handling liquids. Penetrating liquids can cause short circuits or electric shock.

Connection data

- Observe the specified electrical connection data (see section “10 Technical data” on page 48).

Covers of electrical components

- Do not open the covers while the Side Stream Filter is turned on or in operation.
- Do not remove covers when wiring or checking, even if the Side Stream Filter is turned off.

2.5.4 Dangers when handling the circulation pump

The side stream filter uses a circulation pump, which poses various hazards. To avoid property damage and injury, observe the following safety instructions:

- Use the Side Stream Filter only in accordance with the technical specifications (see section "10 Technical specifications" on page 48).
- Do not use the Side Stream Filter to transport flammable or hazardous liquids.
- Do not leave the Side Stream Filter unattended during operation or make sure that unauthorized persons do not have access to the Side Stream Filter.
- Before carrying out any maintenance or servicing work, switch off the Side Stream Filter and unplug it from the power outlet.
- Do not operate the Side Stream Filter with the ball valves at the inlet and outlet of the Side Stream Filter closed.
- Check the area around the side stream filter for leaks and clean up any leaks.
- Protect the pump from environmental influences such as splash water or dust.

2.6 Personal protective equipment

To work safely with the Side Stream Filter, you must wear various personal protective equipment. In the following list and at the corresponding points in the document you will find information on the required personal protective equipment.

The following personal protective equipment is necessary when working with the Side Stream Filter:

- Protective gloves
- safety goggles
- Safety shoes







2.7 Warning and information signs

Places where there is a potential danger under certain conditions are marked with warning and information signs.

- Do not remove warning and information signs.
- Replace any damaged or removed warning and information signs immediately.

The following warning and information signs are located on the Side Stream Filter:

Sign	Meaning	Sign	Meaning
	Warning of electrical voltage		Magnetic Field Warning
	Warning of hot surface		No access for persons with pacemakers or implanted defibrillators

3

Side Stream Filter Description

The MAGella Side Stream Filter is a device for the permanent filtration of water using the bypass process in heating systems.

The side stream filter performs the following tasks:

- Deposition of magnetite
- Fine filtration of non-magnetic particles down to 1µm

The MAGella Side Stream Filter is designed for permanent connection to heating systems.

3.1 The MAGella Side Stream Filter at a glance

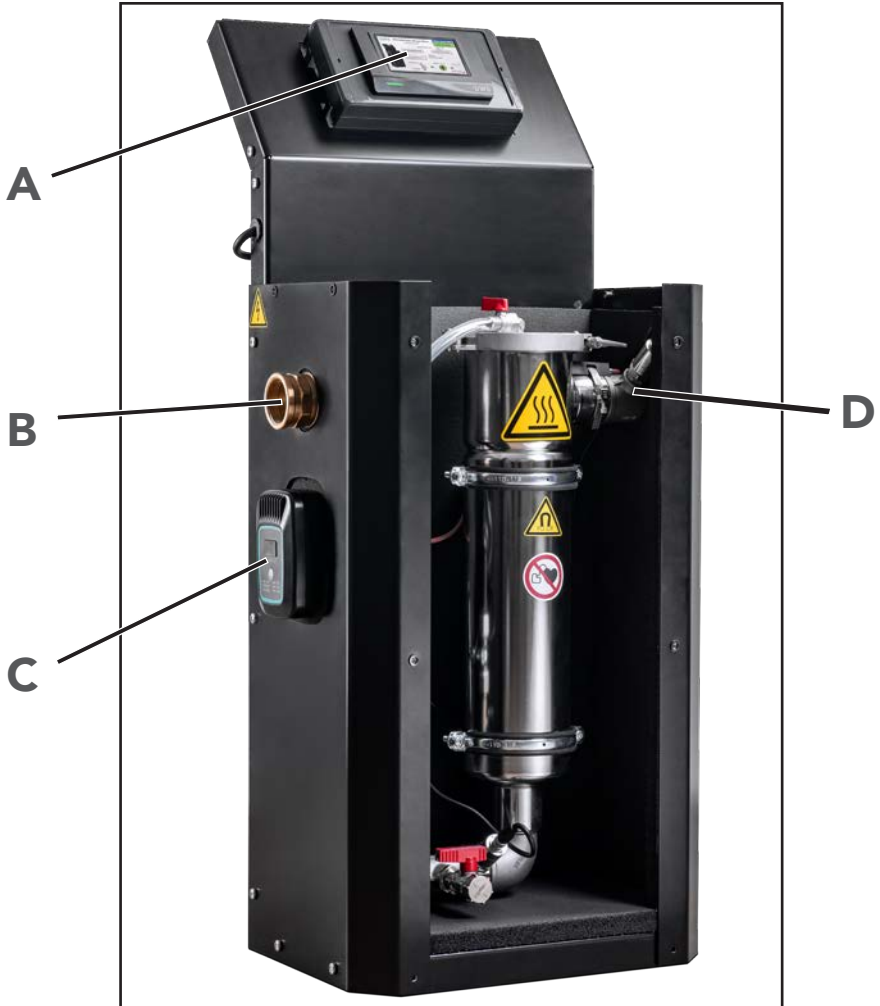


Figure 3-1: Overview of the components of the side stream filter

- A touchscreen monitor 4.3"
- B Outlet circulating water
- C recirculation pump
- D Circulation water inlet

3.2 Side Stream Filter Details

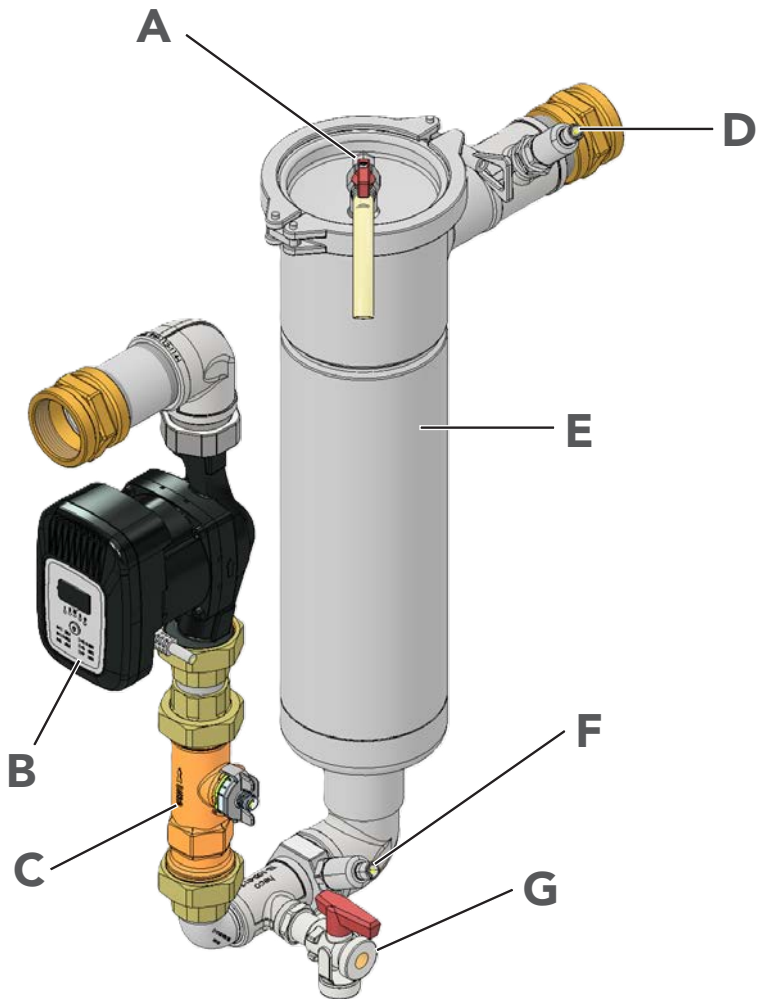


Figure 3-2: Overview of the components of the side stream filter

A	Filter deaeration	E	Dualfilter MAGella twister10 (Magnetite and fine filter 1 μm)
B	recirculation pump	F	Pressure sensor after filter
C	flow meter	G	draining
D	Pressure sensor before filter		

3.3 Inlet of circulating water

The return flow of the heating system is connected to the circulating water inlet. The system's circulating water is transported through the side stream filter and mixed again in a remote return line. (see Chapter 7.2)

3.4 Differential pressure measurement

The differential pressure between the filter inlet and filter outlet is measured to determine the degree of contamination of the filters.

3.5 Circulation pump

The circulation pump pumps the water through the side stream filter.

3.6 Outlet of circulating water

The return flow of the heating system is connected to the circulating water outlet. The treated water from the MAGella Side Stream Filter is transported into the heating system circuit through the circuit water outlet.

3.7 Display with control panel

The operator panel allows you to access the control of the MAGella Side Stream Filter. Settings can be made and functions activated in the operating menus.

3.8 Magnetite separator MAGella twister10

The dual filter of the MAGella twister10 is a unique, highly efficient system filter for magnetic and non-magnetic contaminants in heating systems. It contains an absolute fine filter down to 1 μm and one of the most powerful magnetite separators on the market.

4 Operation

The following section provides instructions on how to use the Side Stream Filter.

4.1 Preparing the Side Stream Filter for Operation



A NOTICE

Controls

The controls referred to in the text are explained in section "3 Side Stream Filter Description" starting on page 17.



A NOTICE

When connecting, observe the electrical connection data (see section "10 Technical data" on page 48).

4.2 Connecting and operating side stream filters



CAUTION

Risk of injury due to improper connection

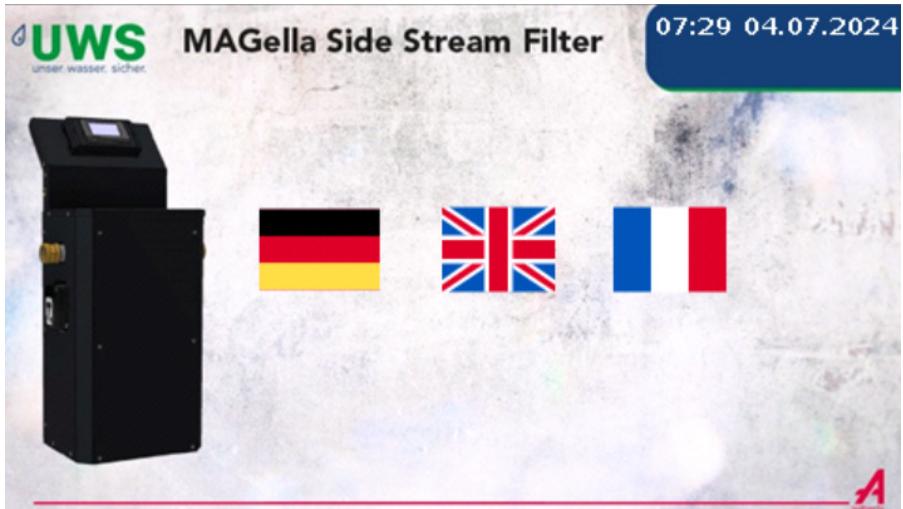
Improper connection may result in hot liquids leaking or damage to the Side Stream Filter.

- Make connections to the heating system in a depressurized state. To do this, close the corresponding valves on the heating system.
- Select the connection points in the heating system's piping system so that they are far enough apart to avoid a short circuit.
- Install a connection piece of size 1 1/2" at each connection point in the heating system's pipe system.

4.3 Water values to be observed for the operation of the Side Stream Filters

Water values	At least	Maximum
pH value	8,2	9,5
conductivity $\mu\text{S}/\text{cm}$	10	1.000
$^{\circ}\text{dH}$	0,3	7

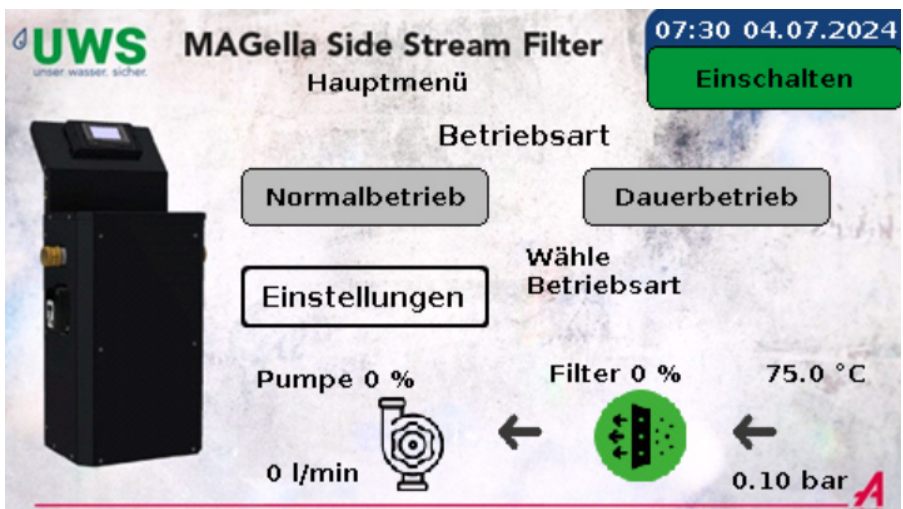
4.4 Touchscreen operation



After the Side Stream Filter is connected to the power supply, the boot process starts, which is indicated by a flashing light on the touchscreen.

- When the touchscreen has fully booted up, the start screen will appear screen always the language selection page
- The status LED now lights up permanently
- On this page you can choose between German, English and French.

4.5 Main menu



In the main menu of the control you can make the following settings and activate or deactivate functions:

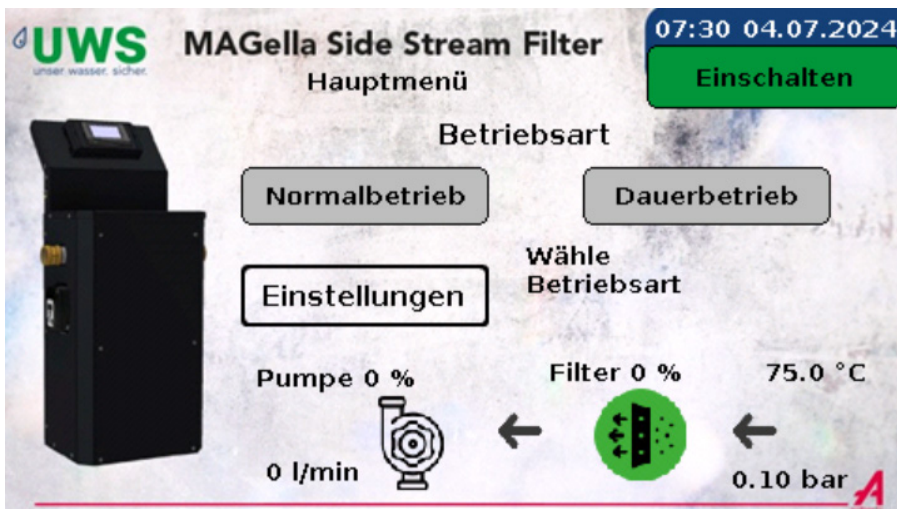
4.5.1 Starting the system

- The green “Switch on” function starts the side stream filter.
- The red “Switch off” function stops the side stream filter.

4.5.2 Operating mode

- **Under** operating mode, you can choose between normal and continuous operation **selected** can be selected.
- The active operating mode is highlighted in green.

4.5.3 General information



The current status of the system is shown below the continuous operation display.

- ➔ Select operating mode
- ➔ Normal operation active
- ➔ Normal operation Pause, wait for time slot
- ➔ Continuous operation active, change to normal operation, after the time has elapsed

- If the pump is active, the pump is displayed in green; if the pump is inactive, the symbol is black.
- The currently set pump performance is displayed above the pump.
- The current flow rate in l/min is displayed below the pump.
- The color of the filter symbol changes depending on the filter load.



0 – 30%



30 – 60%



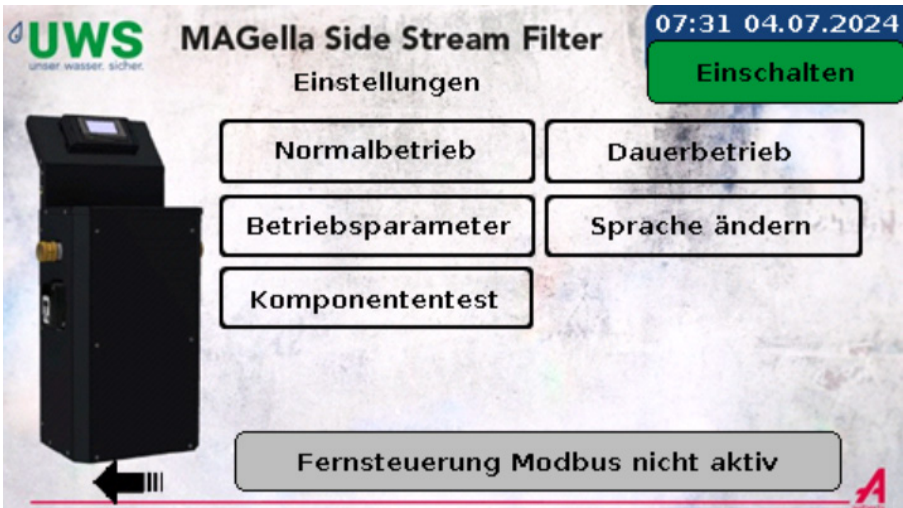
60 – 90%



90 – 100%

- The current filter load in % is displayed above the filter symbol.
- To the right below the filter symbol, the pressure in front of the filter is displayed in bar.
- The temperature is measured in °C at the filter inlet.

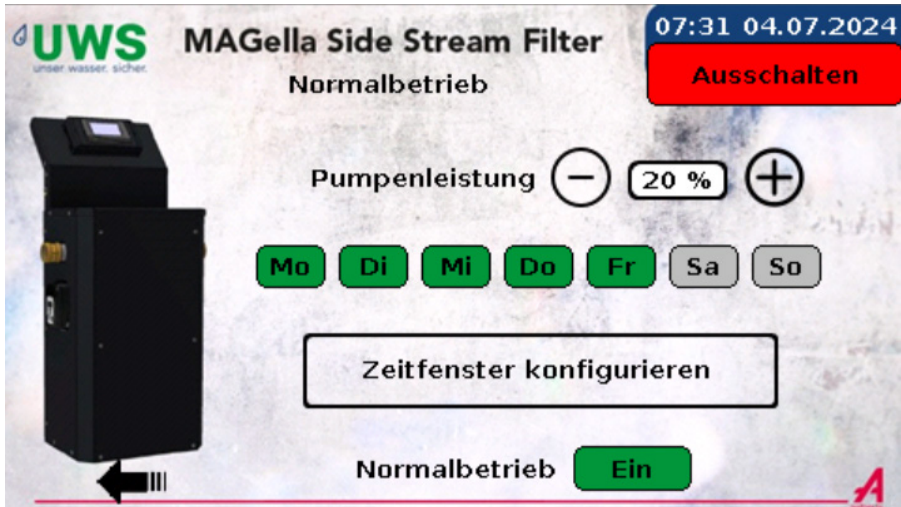
4.6 Settings



Under the Settings item, the following changes can be made, which are explained in the next sections.

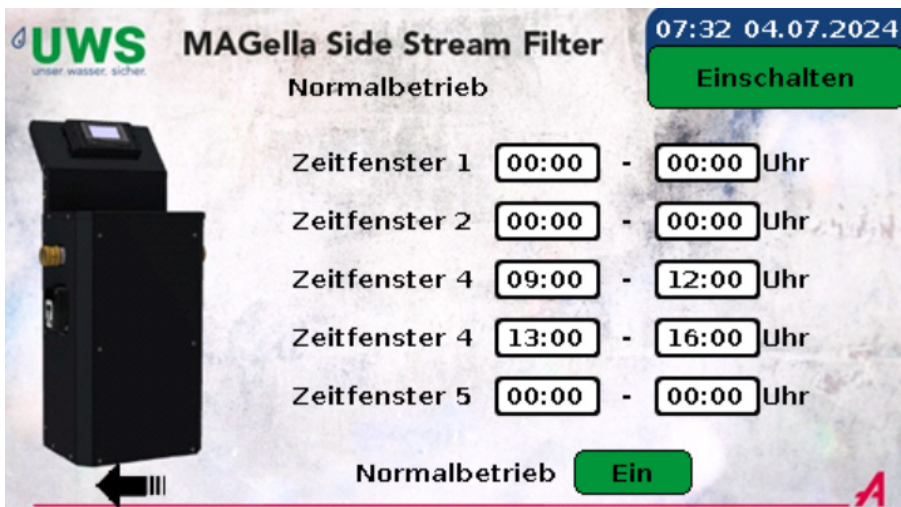
The black arrow takes you back to the main menu.

4.6.1 Normal operation



The following settings can be made on the “Normal Operation” page:

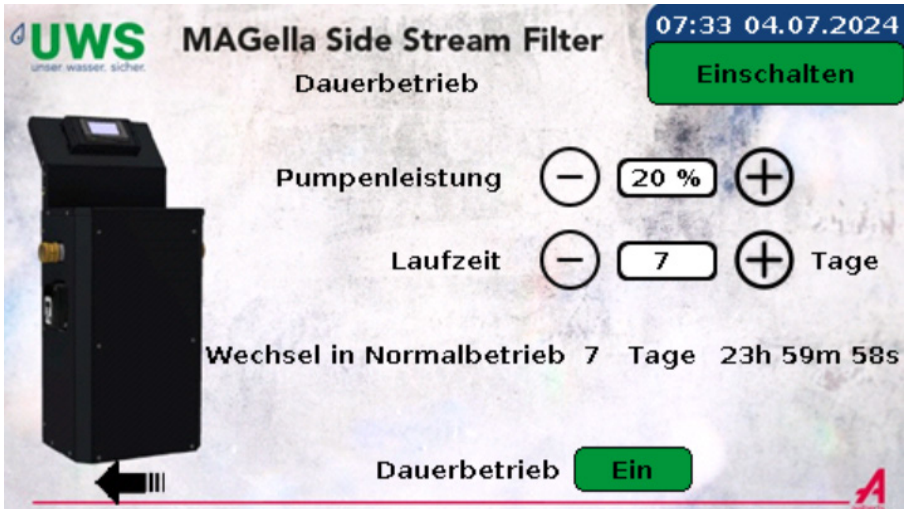
- Turning the system on and off
- The pump output in normal operation can be adjusted in 5% increments from 10 - 100%
- Select the days on which normal operation should be active
 - ➔ If the day of the week is grayed out, the day is inactive
 - ➔ If the day of the week is highlighted in green, the day is active



Using the "Configure time window" option, 5 time windows can be set individually:

- Time slots from 00:00 – 00:00 are not active
- Normal operation can be activated via "On" (green) and deactivated via "Off" (red).

4.6.2 Continuous operation



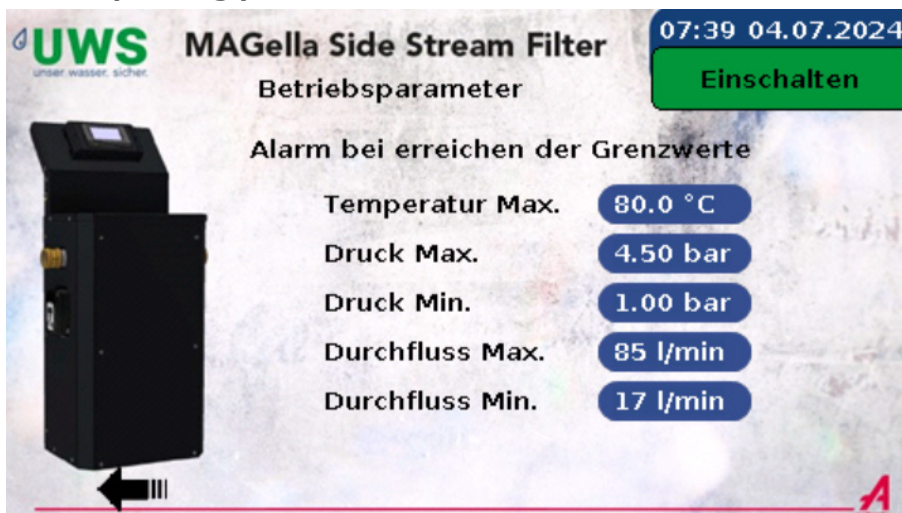
The following settings can be made on the "Continuous Operation" page:

- Turning the system on and off
- Adjust the pump output in continuous operation from 10 – 100%
- The duration in days in which continuous operation should be active from 1 to 31 days
- Continuous operation can be activated via "On" (green) and deactivated via "Off" (red)

The remaining days and the remaining running time until normal operation is resumed are displayed.

The black arrow takes you back to the settings menu.

4.6.3 Operating parameters

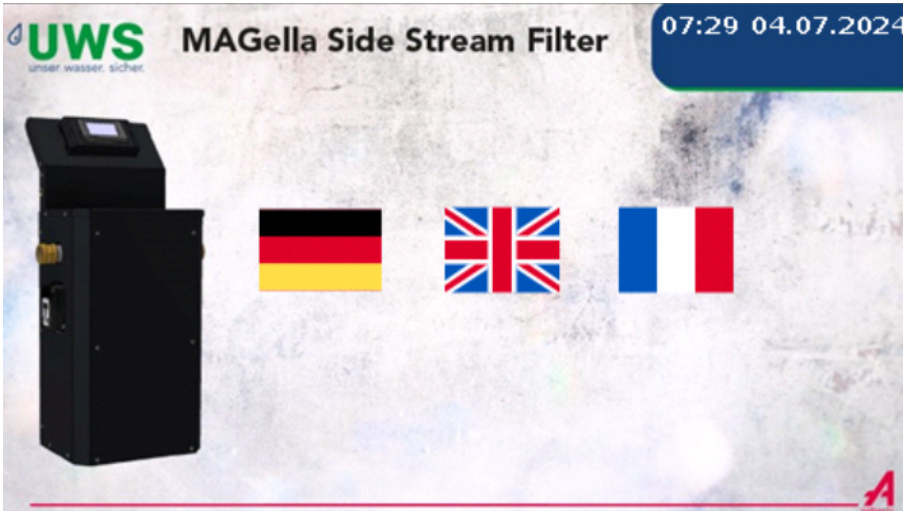


The following settings can be made on the "Operating Parameters" page:

- Temperature Max. from 0 – 80 °C
- Max. pressure from 0 – 8 bar
- Pressure Min. from 0 – 5 bar
 - ➔ If these parameters are exceeded or not met, an error message appears in the display and the system goes into fault mode. The pump is deactivated.
 - ➔ The minimum operating pressure should be 1.2 bar to ensure optimal to ensure the smooth operation of the Side Stream filter.
- Max. flow rate from 30 – 85 l/min
- Minimum flow rate of 15 – 40 l/min
 - ➔ These parameters can be used to set the maximum and minimum flow of the Pump are controlled, these parameters should still be exceeded or. If the limit is exceeded, an error message appears on the display and the System goes into error. The pump is deactivated.

The black arrow takes you back to the settings menu.

4.6.4 Change language



On this page you can choose between:

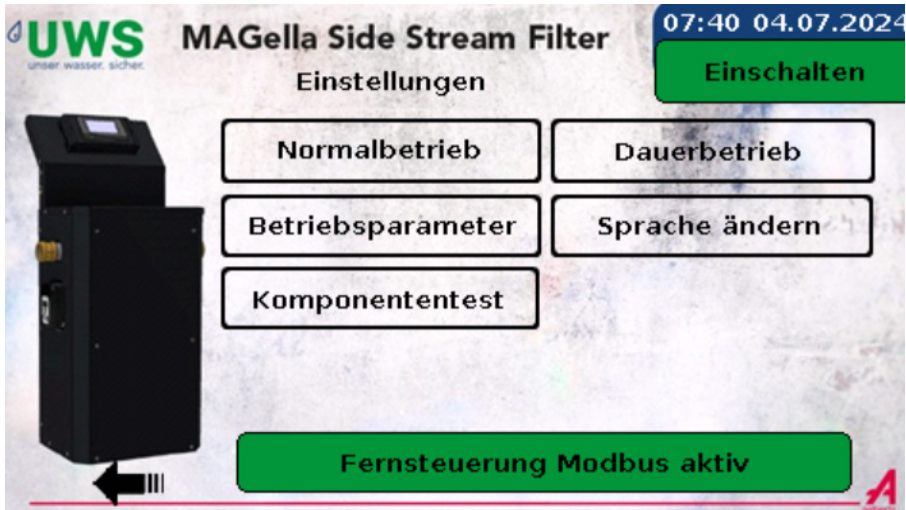
- German • English • French

4.6.5 Component test



On the Component Test page, the pump can be manually switched on and off. If the pump is activated manually, it runs at maximum power.

4.6.6 Remote control



If remote control via Modbus is active, the field is highlighted **green**

If the remote control is inactive, the field is **grayed** out.

The remote control only affects the pump performance in normal and continuous operation.

If no data is sent to the side stream filter via the Modbus interface and the remote control is activated, the pump output drops to 10% (a fixed value that cannot be undercut).

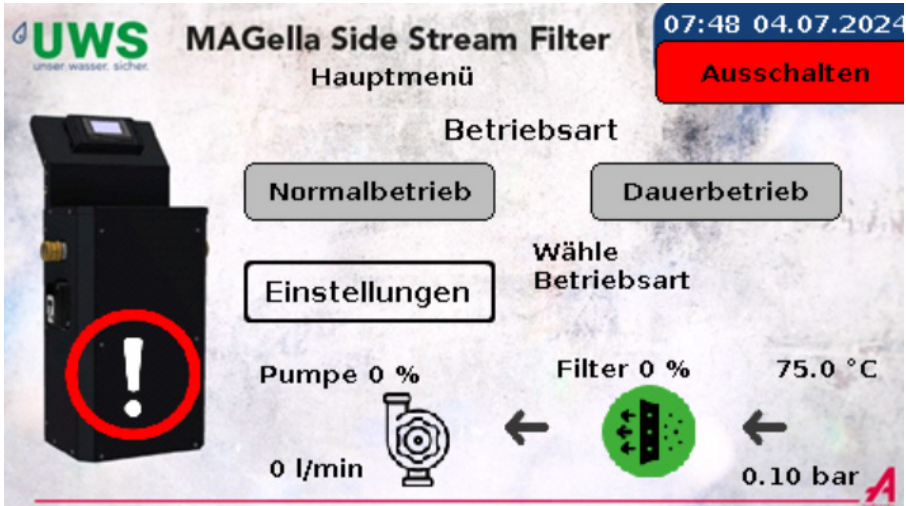
Only when the remote control is deactivated again can the pump performance be controlled via the display.

If remote control of the Modbus interface is activated, the side stream filter can be controlled via the building management system.

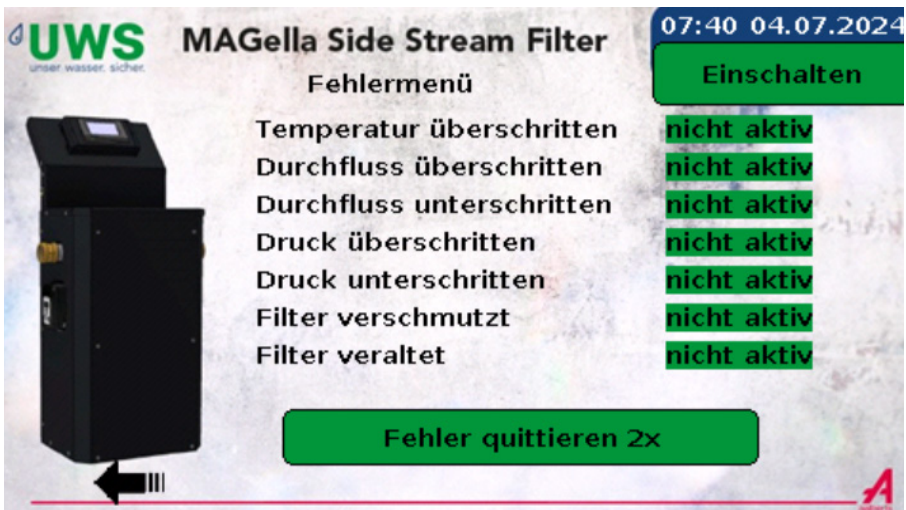
The following settings are possible:

- Turning the Side Stream Filter on and off
- Enable and disable normal operation/continuous operation
- Adjust pump output for normal operation
- Adjust pump output for continuous operation

4.7 Error menu



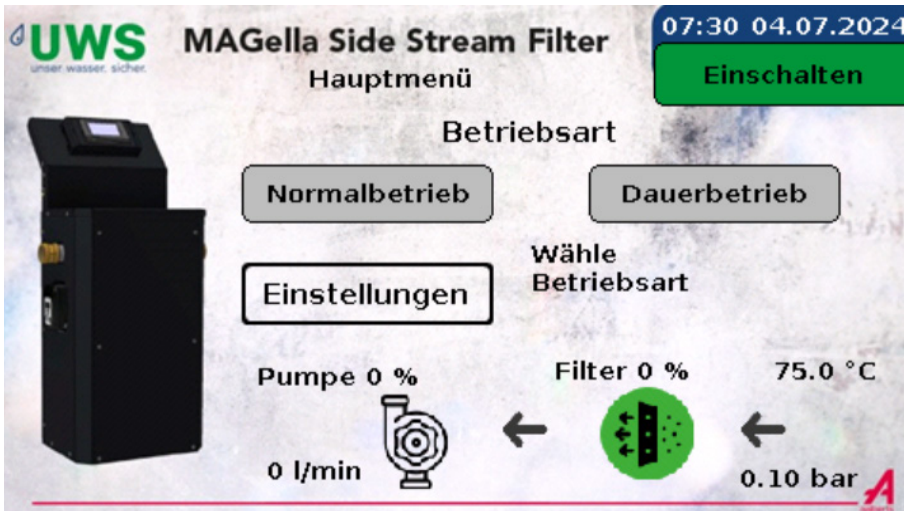
If a fault is active, the red-framed exclamation mark appears on the screen.
 If you touch the exclamation mark, the error menu opens.



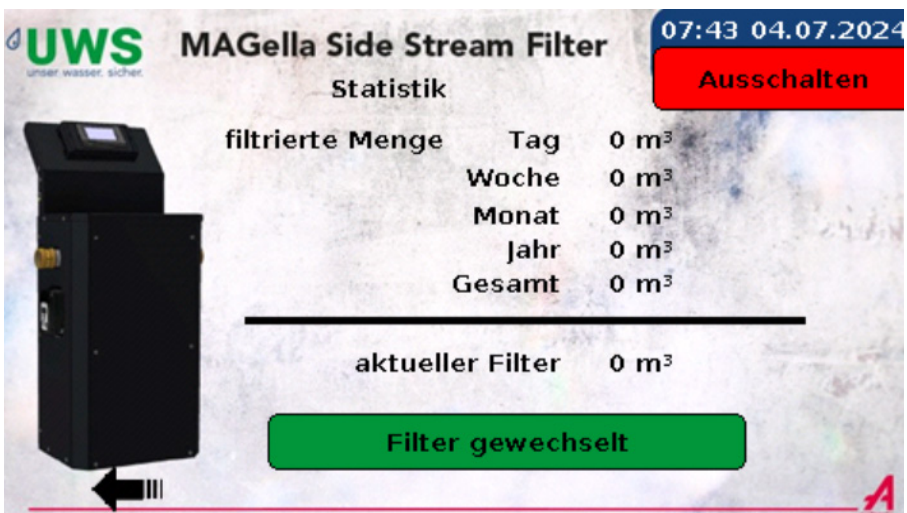
All active faults are displayed in the error menu.
 By clicking on the "Acknowledge error" field the error is deleted.

4.8 Quick access

4.8.1 Statistics



You can access the statistics menu by pressing the filter symbol (green here).



The Statistics page displays the following values:

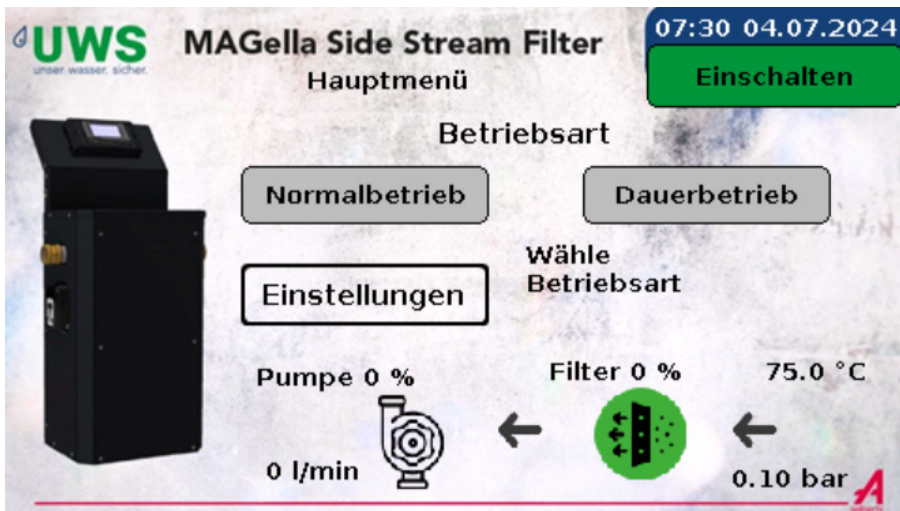
- Amount of water filtered on this day
- Amount of water filtered this week
- Amount of water filtered this month
- Amount of water filtered this year
- total amount of filtered water
- Amount of water filtered by the current filter

→ If a new filter is inserted, it must be selected via “Filter changed”

be activated.
current filter.

This also returns the filtered amount of water from the
set.

4.8.2 Quicksettings



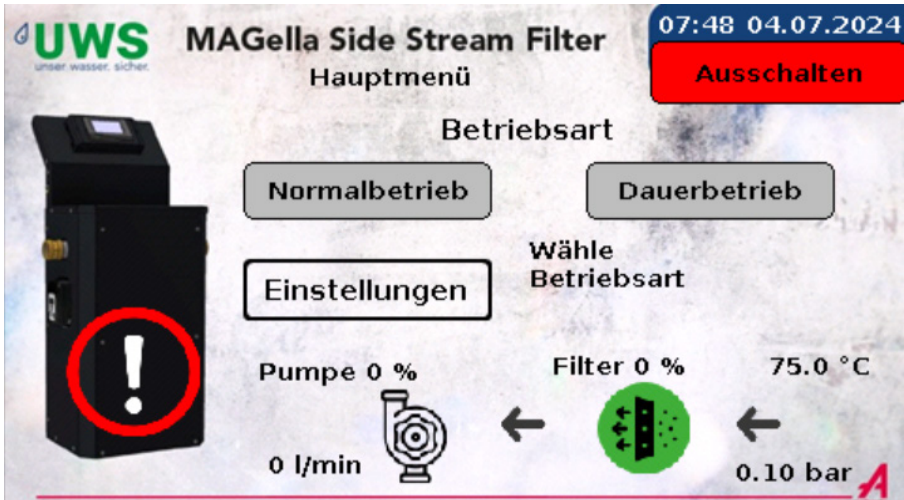
Settings can be changed depending on the active mode.

If normal operation is active and the appropriate status is displayed in the status field, you can access the “Normal operation settings” page by pressing the pump symbol.

The same procedure applies to continuous operation; this takes you to the “Continuous operation settings” page.

If no operating mode is active, you will enter the component test menu.

4.8.3 Display



- Status - System ON/OFF
- Active operating mode
- status field
- temperature of the circulating water in °C
- Inlet pressure in bar – pressure before filter
- Degree of contamination of the filter in %
- pump performance in %
- flow rate in l/min

5 Modbus-RTU

The MODBUS master is able to access the data from one or more connected MODBUS slaves. The MODBUS master sends a request to the MODBUS slave, which responds to the request by, for example, returning the requested measured values. The MODBUS master is also able to specify certain values to the MODBUS slave, for example by writing them into the holding register.

The MODBUS slave is only able to respond to requests from the MODBUS master and does not communicate with other slave devices.

MODBUS RTU is a serial transmission method and supports data exchange via direct wiring.

5.1 MODBUS RTU connection settings

To communicate with the MODBUS master, the correct transmission rate, protocol and side stream filter address must first be set.

The settings for the side stream filter are as follows:

device type	Slave
baud rate	9600 Hz
parity	Straight
Stop bits	1
Device address	1
protocol	RTU

The connection settings must be identical for all participants in the Modbus. Otherwise, there may be disruptions or total failure in communication.

5.2. Discrete Inputs Register 2 [read]

address	Name	Description	unit	Type	factor
0	System On/Off	true = On			
10	Pump On	true = active			
14	Remote control	true = active			
18	Collection disturbance	true = active			
22	Flow exceeded	true = active			
26	Flow below limit	true = active			
30	Temperature exceeded	true = active			
34	Pressure exceeded	true = active			
38	Pressure below	true = active			
42	Filter outdated	true = active			
46	Filter full	true = active			

5.3. Single Coils Register 5 [write]

address	Name	Description	unit	Type	factor
12	System On/Off	1 switching pulse = switch mode			
16	Activate remote control				
20	Normal operation On/Off				
24	Continuous operation on/off				
28	confirm new filter				
32	Fault Unlock				

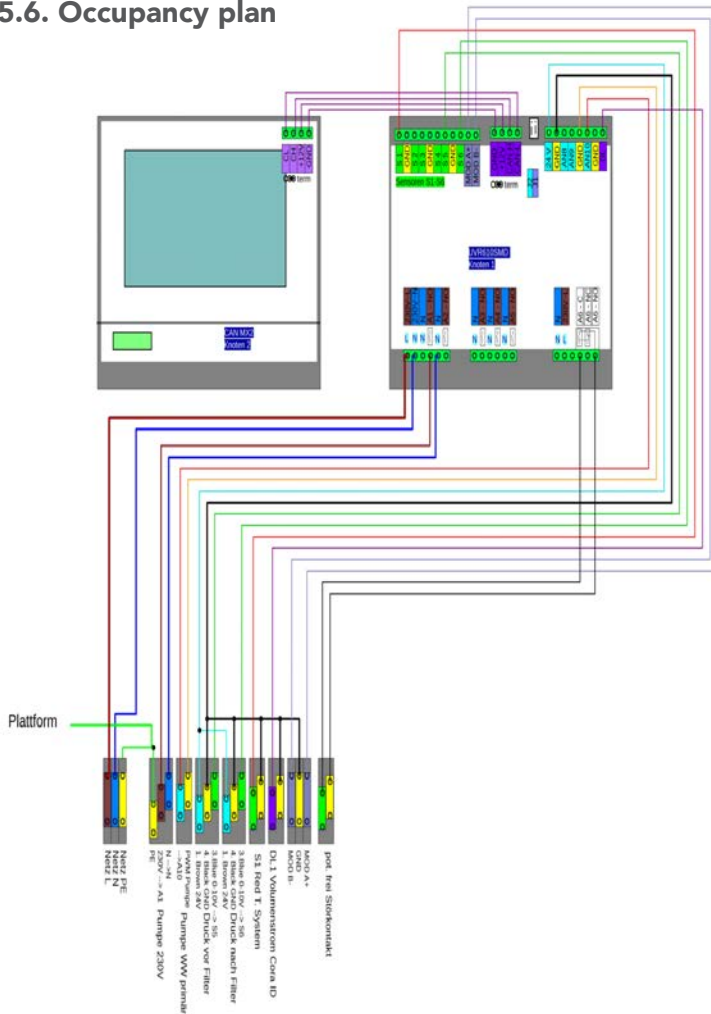
5.4. Input Register 4 [read]

address	Name	Description	unit	Type	factor
50	PMW power pump		%	Signed 16 Bit (Big Endian)	x 0,1
54	Operating mode	1 = normal operation, 2 = continuous operation			
58	Filter loading		%		x 0,1
62	temperature		°C		x 0,1
66	Pressure before filter		bar		x 0,01
70	Pressure after filter				x 0,01
74	Flow sensor		l/min		
78	Remaining days of continuous operation		Days		
82	Remaining time continuous operation		secondary	32 bit floating point (big endian)	
86	Quantity counter day		m ³		
90	Quantity counter week				
94	Quantity counter month				
98	Quantity counter year				
102	Quantity counter total				
106	Amount of water per filter				

5.5. Holding Register 6 [write]

address	Name	Description	unit	Type	factor
36	Performance Pump Normal Operation	min. 10%, max. 100%	%	Signed 16 bit (Big Endian)	
40	power pump continuous operation				

5.6. Occupancy plan



5.7. Fault contact SSF

The side stream filter can pass on interference to the building management system.

The active fault message can be forwarded to the building management system by a direct connection to terminal A6 (NO) and terminal A6 – C.

During normal operation without fault message, contact A6–C and contact A6–NO are closed, contact A6–C to A6–NC is open.

If an active fault signal or an interrupted power supply is present, contact A6–C and contact A6–NO are opened and contact A6–C is closed with contact A6–NC.

6 Maintenance and repair

To ensure trouble-free operation of the Side Stream Filter, the Side Stream Filter must be kept clean and in good working order. Furthermore, regular visual and functional checks must be carried out in order to detect and remedy any damage at an early stage.



CAUTION

Risk of injury due to improperly performed maintenance work

The Side Stream Filter may only be serviced by qualified personnel trained in safety technology.

Before performing any maintenance or servicing, perform the following steps:

- Turn off the side stream filter.
 - Disconnect the Side Stream Filter from the power supply.
 - Use suitable measures to protect the side stream filter against being switched on again.
 - Please also note the safety instructions in section “2 Safety instructions” on page 10.
-

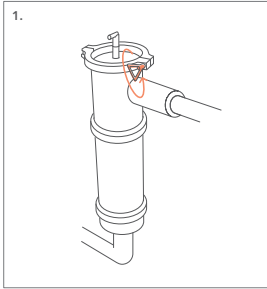
6.1 Maintenance schedule

The following table provides an overview of the maintenance work to be carried out regularly:

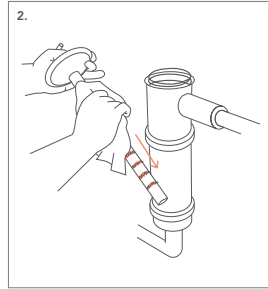
interval	activity	Jurisdiction
Daily	Check MAGella twister and replace depending on the degree of contamination	Operating personnel
Biannually	Check the fastening and position of the side stream filter as well as welded and screwed connections	Operating personnel
Annually	Check warnings and markings on the Side Stream Filter	Operating personnel

6.2 Maintenance/Cleaning MAGella twister10

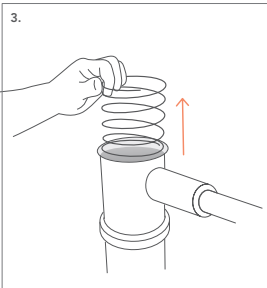
This section provides instructions on how to clean the built-in dual filter. To clean the filter, proceed as follows:



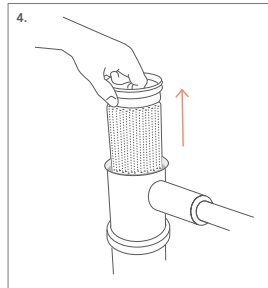
1. Close the inlet and outlet valves. Open the fill and drain valve to release the pressure. Then open the vent tap on top of the filter. Unscrew the wing nut and remove the cap.



2. Remove the magnetic rod and clean it, for example with a cloth.



3. Then remove the compression spring and clean it with water if necessary.



4. Now you can remove and replace the basket with the fine filter bag. (spare part number 100451)

The assembly takes place in reverse order. The twister insert on the magnetic rod should be directed towards the entrance to achieve the highest capacity.

6.3 Regular internal audit

Certain parts of the side stream filter are additionally checked and maintained at regular intervals:

- recirculation pump

The inspection dates must be coordinated by the operator.

6.4 Spare parts and accessories

The following spare parts are available for the Side Stream Filter from the manufacturer:

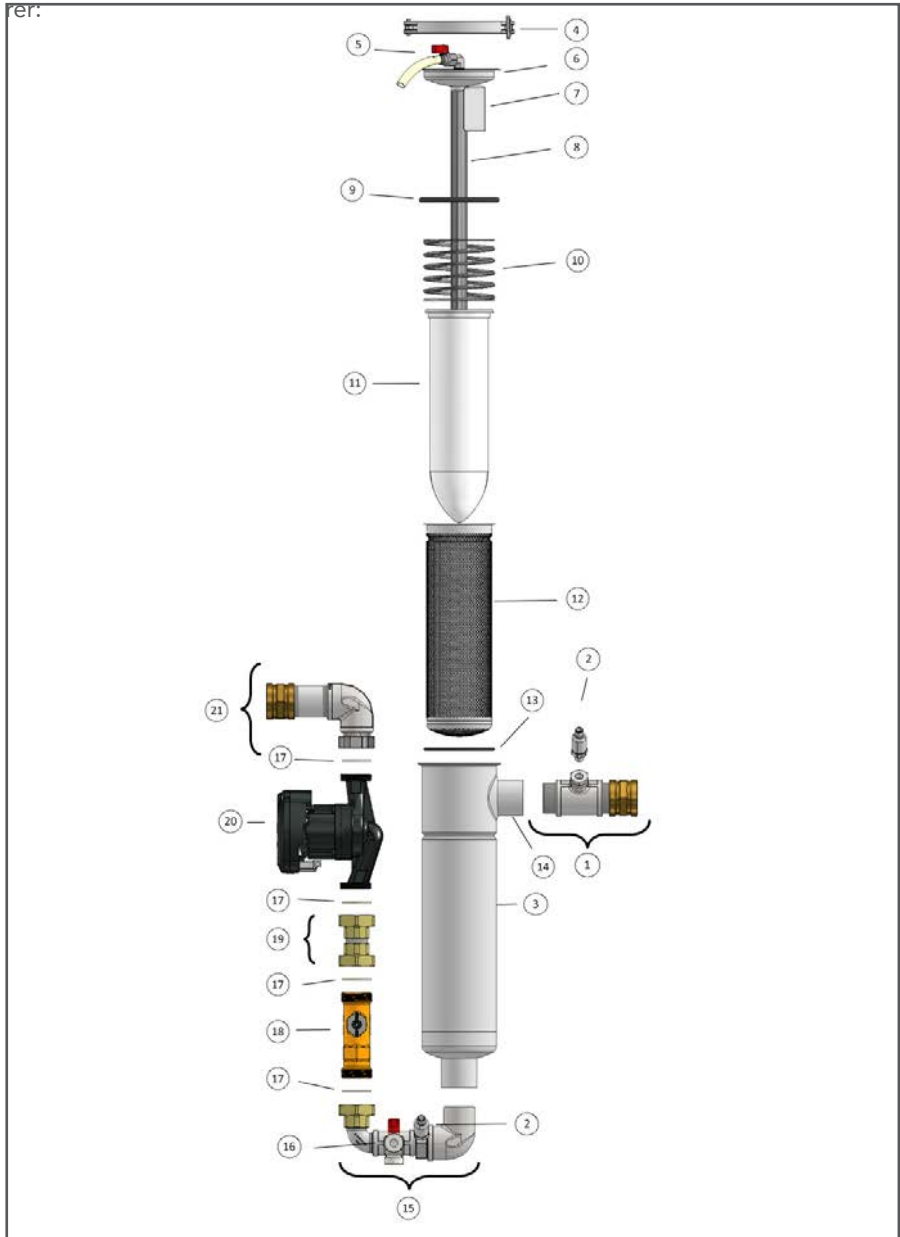


Figure 6-4: Spare parts MAGella Side Stream Filter

No.	No.	article number	designation	Remark
1		MAG-200200-1	input module	without sensor
2		100466	pressure sensor 0-10 bar	
3		MAG-100101	MAGella Twister 10 complete	
to 3	4	MAG-100101-1	Tension clamp	
	5	MAG-100101-2	air vent	
	6	MAG-100101-6	Lid Twister 5 & 10	
	7	MAG-100101-3	Twister insert	
	8	MAG-100101-4	magnetic rod	
	9	MAG-100101-5	lid seal	
	10	MAG-100101-7	compression spring	
	11	100451	fine filter 1 µm	
	12	MAG-100101-8	filter basket	
	13	100012-10	filter basket seal	
14		100467	temperature sensor	
15		MAG-200200-2	filter output module	with fill and drain valve, without sensor
16		100468	Ball valve KFE 1/2" MS	
17		100469	flat gasket 1 1/2"	
18		100470	volume flow sensor	
19		MAG-200200-3	pump screw connection	
20		100464	recirculation pump	
21		MAG-200200-4	output module	
Other spare parts				
		100489	MAGella SSF1 control system	
		100490	display unit MAGella SSF1	
		MAG-100101-9	terminal housing MAGella SSF1	

7

Transport, installation and commissioning

7.1 Transport

Use lifting equipment such as a crane or forklift to transport the Side Stream Filter. The lifting equipment must be suitable, tested and approved. On level ground, you can use the wheels of the sack cart to move the Side Stream Filter.

Please note the following instructions during transport:

- Use suitable tools to secure the Side Stream Filter against slipping or tipping over.
- When transporting the Side Stream Filter, only place loads on suitable points.
- Remove the transport devices after transport.

7.2 Installation and commissioning

To avoid damage to the Side Stream Filter or injury to persons, observe the following instructions during installation and commissioning:

- Installation and commissioning may only be carried out by trained specialists from a recognized specialist trade company in the SHK sector, taking the necessary safety measures into account.
- Before starting installation, inspect the Side Stream Filter for completeness and possible transport damage. The following components are included in the delivery:
 - Side Stream Filter as ordered, pre-assembled
 - Operating instructions
- Place the Side Stream Filter on a firm and level surface.
- Do not install the Side Stream Filter in areas prone to frost.
- Lay cables, hoses and lines so that they do not pose a tripping hazard. Mark unavoidable tripping hazards.
- Connect the Side Stream Filter to the power supply correctly, observing the electrical connection data (see section "10 Technical data" on page 48).
- Please install a shut-off device between the main return of the heater and the inlet of the side-stream filter as well as between the outlet of the side-stream filter and the main return of the heater. These shut-off devices enable the control of water supply and drainage during maintenance and repair work.

The Side Stream Filter is designed for permanent connection to a heating system. Please note the following when connecting:

- Before connecting the Side Stream Filter, familiarize yourself with the specific structure of the heating system. Please contact the manufacturer if you need assistance.
- Make sure that the installation work is carried out professionally and that the result complies with the relevant rules and regulations.

In the bypass process, a partial volume flow of the water from a heating system is passed through the side stream filter.

During preparation, we recommend switching on the system pumps to achieve the fastest possible mixing.

The following figure shows an example of connecting the side stream filter using the bypass method:

Attention:

The installation of two shut-off devices (inlet and outlet) is mandatory!

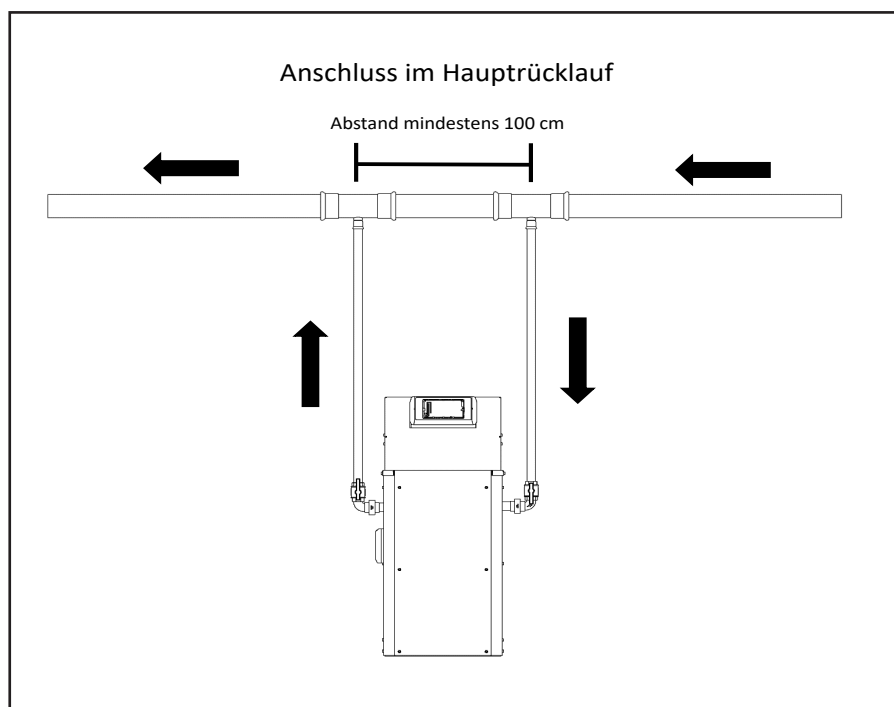


Figure 7-2: Connection diagram for bypass method

Table minimum connection size

with a total connection length of 10 m (5 m supply line; 5 m discharge line)

Leistung Pumpe	Durchflussmenge	l/h	Stahlrohr		Mapress Edelstahl
10 %	20 l/min	1200 l/h	DN 25	1 "	35 x 1,5
15 %	23 l/min	1380 l/h	DN 32	1 1/4 "	35 x 1,5
20 %	27 l/min	1620 l/h	DN 32	1 1/4 "	35 x 1,5
25 %	31 l/min	1860 l/h	DN 32	1 1/4 "	35 x 1,5
30 %	35 l/min	2100 l/h	DN 32	1 1/4 "	42 x 1,5
35 %	39 l/min	2340 l/h	DN 32	1 1/4 "	42 x 1,5
40 %	43 l/min	2580 l/h	DN 32	1 1/4 "	42 x 1,5
45 %	47 l/min	2820 l/h	DN 40	1 1/2"	42 x 1,5
50 %	51 l/min	3060 l/h	DN 40	1 1/2"	42 x 1,5
55 %	55 l/min	3300 l/h	DN 40	1 1/2"	42 x 1,5
60 %	58 l/min	3480 l/h	DN 40	1 1/2"	42 x 1,5
65 %	62 l/min	3720 l/h	DN 40	1 1/2"	54 x 1,5
70 %	66 l/min	3960 l/h	DN 40	1 1/2"	54 x 1,5
75 %	70 l/min	4200 l/h	DN 50	2 "	54 x 1,5
80 %	74 l/min	4440 l/h	DN 50	2 "	54 x 1,5
85 %	78 l/min	4680 l/h	DN 50	2 "	54 x 1,5
90 %	80 l/min	4800 l/h	DN 50	2 "	54 x 1,5
95 %	83 l/min	4980 l/h	DN 50	2 "	54 x 1,5
100 %	85 l/min	5100 l/h	DN 50	2 "	54 x 1,5

Maximum flow to be set depending on the pipe size

Stahlrohr	max. Pumpenleistung	Maximaldurchfluss
1 "	10 %	20 l/min
1 1/4 "	40 %	43 l/min
1 1/2 "	70 %	66 l/min
2 "	100 %	85 l/min

Mapress Edelstahl	max. Pumpenleistung	Maximaldurchfluss
35 x 1,5	25 %	31 l/min
42 x 1,5	60 %	58 l/min
54 x 1,5	100 %	85 l/min



Dismantling and disposal



CAUTION

The Side Stream Filter may only be dismantled by authorized and qualified personnel who are aware of the hazards involved.



A NOTICE

Regulations and laws

Observe local regulations and laws regarding the disposal of environmentally harmful substances.

- The Side Stream Filter may only be dismantled by authorized personnel.
- Please observe the safety instructions in the operating instructions in section "2 Safety instructions" on page 10.
- Do not touch any live components.
- Wear appropriate personal protective equipment.
- Only use suitable and tested lifting equipment.

Injuries can be caused by:

- Live components
- Heavy components that fall down after being loosened
- Sharp edges

8.1 Specialist personnel

The specialist staff must take the following points into account:

- Please observe the safety instructions in this operating manual.
- Wear appropriate personal protective equipment.
- Only use suitable and tested lifting equipment.
- Use suitable means of transport and keep transport routes clear.
- Before starting work, switch off the Side Stream Filter and disconnect it from the power supply.

8.2 Removal

To dismantle the Side Stream Filter, proceed as follows:

- 1 Turn off the Side Stream Filter and disconnect the power supply from the grid.
- 2 Discharge energy storage devices such as springs or capacitors if available.
- 3 Make sure that any residual pressure has been released.
- 4 Using suitable tools, disassemble the Side Stream Filter into its new assemblies.

8.3 Disposal

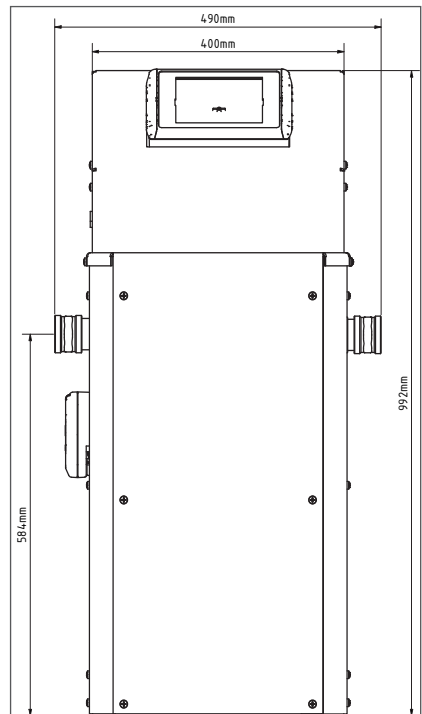
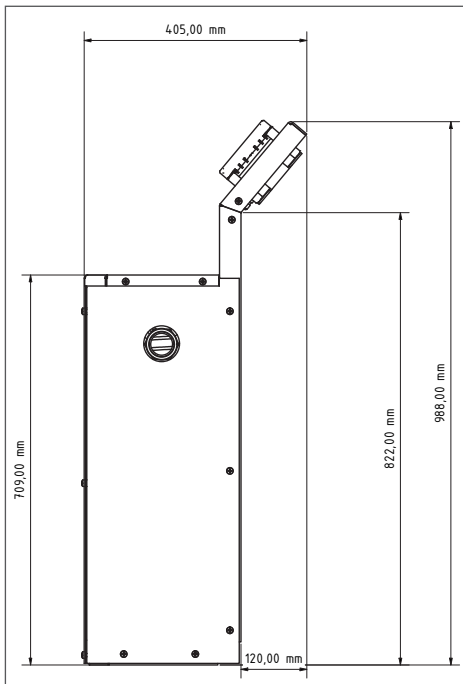
Dispose of components and operating materials properly and in an environmentally friendly manner.

Please observe the legal and company regulations.

9 technical data

In this section you will find technical data about the Side Stream Filter in general as well as about the applications and components used.

9.1 Dimensional drawings



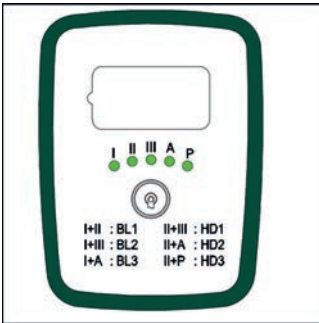
9.2 General data

	MAGella Side Stream Filter
article number	MAG-200200
Max. operating pressure	8 bar
Max flow	5 ^{m3} /h
Maximum temperature	80 °C
Filtration	≥ 1 µm
Glycol / Water	up to 50/50
Power supply	230 V
power consumption	160 W
Display size	4.3"
Weight	32 kg
Housing dimensions (H, W, D in mm)	992 x 490 x 405
Width with connections	520 mm
connection	1 ½" BSP G internal thread
connections	fixed (not rotatable)
volume	45 dB
Languages	German, English, French
Ready for connection in an insulated housing	

9.3 Components

9.3.1 recirculation pump

Maximum operating pressure	10 bar
ambient temperature	-20 °C to 40 °C
Maximum media temperature	95 °C
Maximum relative humidity	95 %



Circulation pump control panel

The circulation pump is controlled via the PWM signal. The switch button has no function. When the pump is active, the LED at **P** lights up.

9.3.2 MAGella twister10

Technical data

MAGella twister10	twister10
Item No.	MAG-100101
High gloss filter housing made of stainless steel V4A	Stainless steel V4A
Filter basket with seal to increase fine filtration	✓
Pressure spring to increase fine filtration	D2
Magnetic field strength (gauss)	11x12.000
connections	1 1/2"
KFE drain valve (included in delivery)	1/2"
Vent shut-off with hose	1/4"
Max. temperature	80 °C
Max. operating pressure	8 bar



EG-Konformitätserklärung



Hiermit erklären wir, dass die nachstehend bezeichnete Maschine in ihrer Konzeption und Bauart sowie in der von uns in Verkehr gebrachten Ausführung den grundlegenden Sicherheits- und Gesundheitsanforderungen der **EG-Richtlinie 2006/42/EG** entspricht. Bei einer mit uns nicht abgestimmten Änderung der Maschine verliert diese Erklärung ihre Gültigkeit.

Gegenstand der Erklärung:	Side Stream Filter
Artikelnummer:	MAG-200200
Baujahr:	2024
Hersteller:	UWS Technologie GmbH Sudetenstraße 6 91610 Ingingen

Der oben beschriebene Gegenstand der Erklärung entspricht den Anforderungen folgender Rechtsvorschriften:

- Maschinenrichtlinie (2006/42/EG) vom 17. Mai 2006
- RoHS-Richtlinie (2011/65/EU) vom 8. Juni 2011
- EMV-Richtlinie (2014/30/EU) vom 26. Februar 2014

Die folgenden harmonisierten Normen und technischen Spezifikationen wurden angewandt:

- DIN EN ISO 12100:2011: Sicherheit von Maschinen – Allgemeine Gestaltungsleitsätze – Risikobeurteilung und Risikominderung
- DIN EN 60204-1: Sicherheit von Maschinen – Elektrische Ausrüstung von Maschinen – Teil 1: Allgemeine Anforderungen
- DIN EN 60335-1: Sicherheit elektrischer Geräte für den Hausgebrauch und ähnliche Zwecke – Teil 1: Allgemeine Anforderungen

Bevollmächtigte Person für die Zusammenstellung der Technischen Dokumentation:

Mario Milković

Ingingen, April 11, 2024

Ort, Datum

Geschäftsführung



our water. safe.

YOUR CONTACT PERSON



Technical changes and innovations are reserved. Images may vary. UWS Technologie GmbH assumes no liability for the accuracy of technical information. Liability is excluded. Reproduction and distribution to third parties only with the express permission of UWS Technologie GmbH.

Status 03/2024

