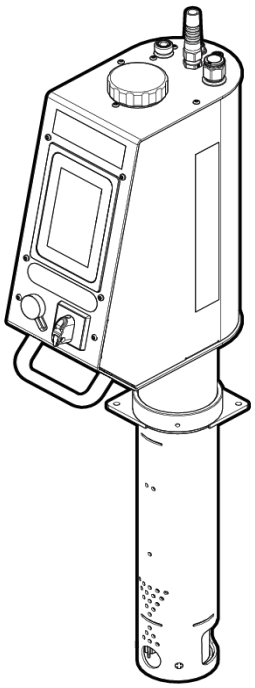
FluidWorker® 50

Installation, Operation and Service Manual



EN Original instructions

WALLENIUS WATER INNOVATION

Rev: E

Table Of Contents

1 General

Please read this manual carefully prior to installation and operation of the unit. Save these instructions for future use.

1.1 Disclaimer

Wallenius Water Innovation AB is not liable or bound by warranty if these instructions are not adhered to during installation, operation or service.

Wallenius Water Innovation AB reserve the right to make changes to components, specifications and modify the contents of the documentation without further notice.

Wallenius Water Innovation AB only guarantees correct function of the unit with original or specified components.

The FluidWorker 50 is designed to treat process fluid. Any other use is prohibited.

Patent pending, patented technology and registered FluidWorker 50 trademark are property of Wallenius Water Innovation

1.2 Warranty

Wallenius Water Innovation AB warrants that this product will be free from defects in material and workmanship for a period of one year from the date of delivery.

Within the warranty period Wallenius Water Innovation AB will repair or replace such products and component parts which are returned to Wallenius Water Innovation AB with shipping charges prepaid and which are determined by Wallenius Water Innovation AB to be defective.

This warranty will not apply to any product or component part which has been subjected to misuse, negligence or accident; or misapplied; or modified or repaired by unauthorized persons or not installed according to specification given in this manual.

Any attempt to change or modify existing equipment with non-original components invalidates the warranty.

Buyer shall inspect the product promptly after receipt and shall notify Wallenius Water Innovation head office in writing of claims, including claims of breach of warranty, within thirty days after the buyer discovers or should have discovered the facts upon which the claim is based.

Failure of the buyer to give written notice of a claim within the time period shall be deemed to be a waiver of such claim.

1.3 Manufacturer

Wallenius Water Innovation AB

www.walleniuswater.com

1.4 Service and Support

For any support issues, please contact Wallenius Water Innovation AB through:

e-mail: support@walleniuswater.com

telephone: +46 8 120 138 10 during office hours CET

1.5 Disposal

Always consult local rules and regulations for correct handling of each material.

At end-of-life, the FluidWorker 50 must be disposed of according to local rules and regulations.

1.6 Validation

This installation and operation manual applies to FluidWorker 50 - V1.

1.7 Acronyms and Abbreviations

HMI
Human Machine Interface.
This is the operation control, the touch display placed on top of the FluidWorker 50.

2 Safety

2.1 Warning, Caution, and Notes

Warning	**Indicates a potentially hazardous situation which could result in death or severe injury.**
CAUTION	**Indicates a potentially hazardous situation which could result in property damage.**
NOTE	A note is used to notify people of installation, operation or maintenance information which is important but not hazard related.

2.2 General Safety Rules

This chapter contains the safety instructions which you must follow when installing, operating and servicing the system. If ignored, physical injury or death may follow, or damage may occur to the drive, the motor or driven equipment.

Warning	**Do not operate the FluidWorker 50 in explosive environments.**
CAUTION	**This equipment must be installed by authorized installation technicians and the installation must adhere to applicable local rules and regulations as well as these installation instructions.**
CAUTION	**Make sure the installation conditions meets the technical specification described in this manual (for example, electrical input).**

3 Transportation

The FluidWorker 50 is transported in a box.

When the FluidWorker 50 is shipped, it comes in one unit.

3.1 Unpacking

Check that there are no transportation damages.

3.2 Delivery Inspection

Check the FluidWorker 50 in general for any damages.

Use the packing list and tick off accordingly.

If something in the delivery is missing or if any part of the FluidWorker 50 is damaged, contact your distributor.

3.3 Uninstallation

Warning	**Make sure to use safety glasses when uninstalling the FluidWorker 50.**

CAUTION	**The water in the FluidWorker 50 must not freeze. Always drain the FluidWorker 50 before storage, transportation or when it is not in use.**

1. Press the *STOP* button on the touch display.
2. Close the water inlet.
3. Go to page Maintenance on the touch display and press *OPEN ALL VALVES FOR 60 SECONDS* button (to release the water pressure).
4. Remove the water hose from the machine.
5. Carefully remove the concentrate tube from the machine.
6. Loosen the tank bracket screw with a 5 mm hex key and lift the FluidWorker 50 to the highest position possible.
7. Tighten the tank bracket hex socket screw.
8. Go to page Maintenance on the touch display and press *OPEN ALL VALVES FOR 60 SECONDS* button (to drain the FluidWorker 50).
9. While the valves are open. Use compressed air in the water inlet and concentrate inlet, in small burst, to remove all fluids from the system. Hold a cloth around the nozzle to prevent splashing.
10. Wait for the 60 seconds to run out
11. Turn off the main switch.
12. Unplug the power cable.
13. Loose the tank bracket screws and lift the machine out of the fluid tank.
14. Wipe the machine with a dry cloth, rinse and clean water hose and tubes outside the machine.

3.4 Shipping and packaging

CAUTION	**The water in the FluidWorker 50 must not freeze. Always drain the FluidWorker 50 before storage, transportation or when it is not in use.**

If the machine is to be shipped, pack it as following.

1. Uninstall the machine according to chapter *3.3 Uninstallation, on page 5*.
2. Place the FluidWorker in a box with protective foam. Preferably use the same box the machine was delivered in. A new box with protective foam inserts can be ordered from your supplier or from Wallenius Water Innovation AB.
3. Make sure the touch screen faces upwards when packing the machine.

4 System Description

4.1 Functional Description

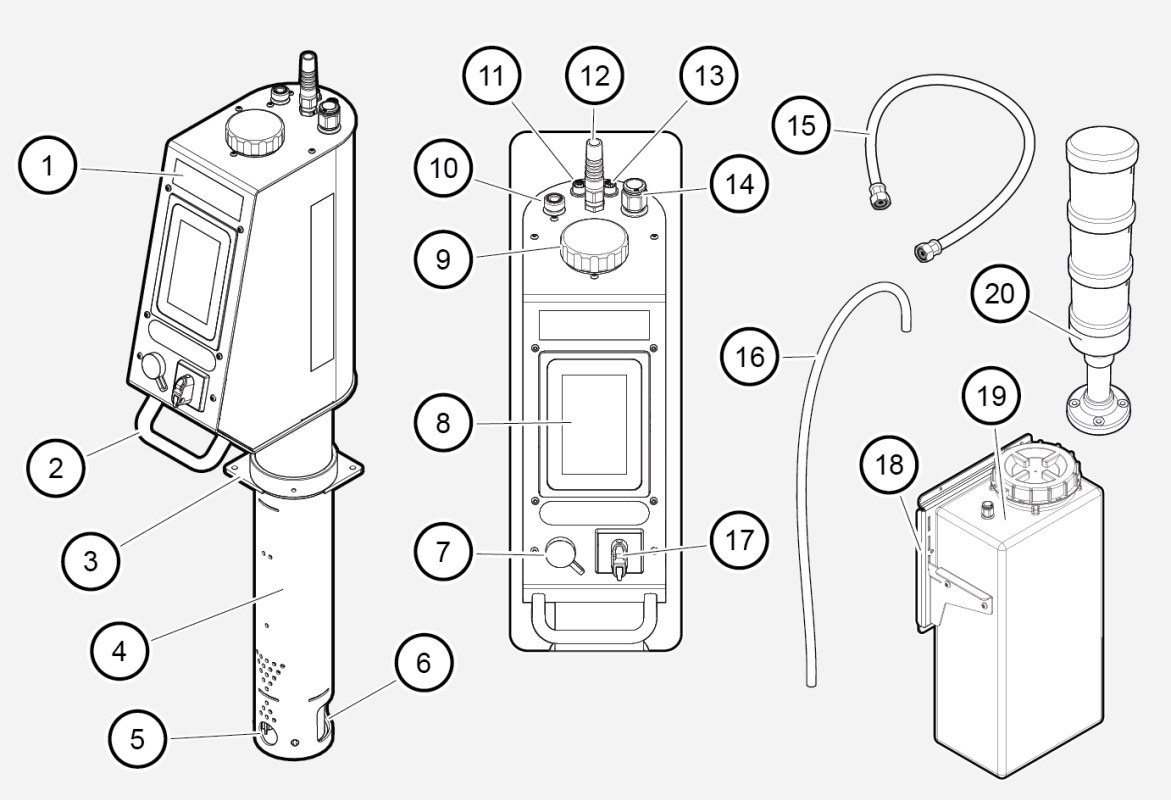
FluidWorker 50 monitors and controls the concentration of the fluid as well as the fluid level in the tank, by adding concentrate and water.

4.2 Control System

The control system monitors correct operation and triggers alarms if any fault occurrs. The FluidWorker 50 is managed through a 5” colour touch screen.

For more information regarding the control system, see *6.2 Automatic Control System, on page 19*.

4.3 System Overview



Position	Description	Position	Description
1	Electrical cabinet	11	M12A (Ethernet)
2	Handle	12	Mains 230VAC, power cord.
3	Tank bracket	13	M12D (signal tower)
4	Pipe body	14	Concentrate inlet
5	Ejector outlet	15	6500 Termopar Hose for water supply. To be connected to fresh water inlet (11)
6	Strainer	16	Concentrate tube
7	USB port, including USB drive.	17	Main switch. The main power switch for the FluidWorker 50
8	Touch display. 5" colour touch screen (HMI)	18	Magnetic bracket (accessories)
9	Concentration sensor	19	Concentrate tank (accessories)
10	½" Fresh water inlet	20	Signal tower (accessories)

5 Installation

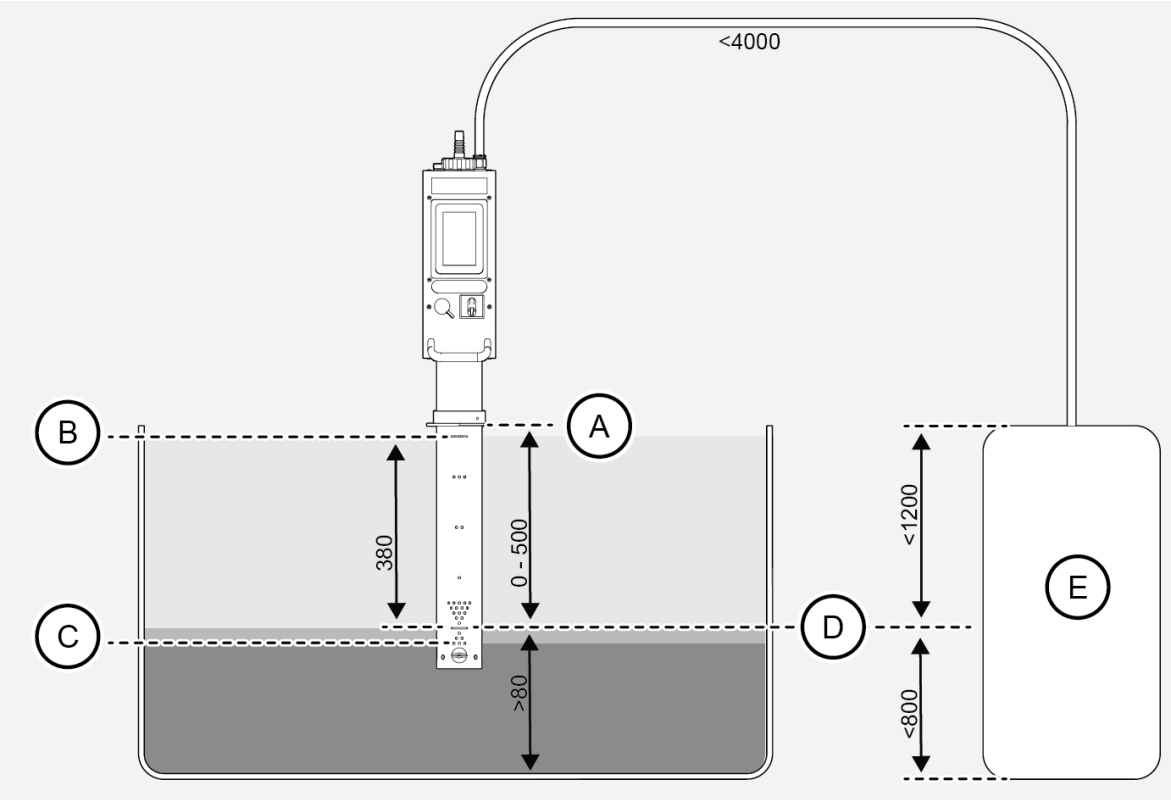
5.1 Before Installation

CAUTION

Read *10 Specifications, on page 37* carefully before installation.

- Make sure the general safety rules are applied.
  See *2 Safety, on page 3* on General safety rules.
- Use only the 6500 Termopar Hose for water supply. The hose acts as a protection for the valves. Never connect a fixed water connection directly to the machine. Due to maximum length of the hose, the FluidWorker 50 must also be placed within 2 m from a water outlet.
- The FluidWorker 50 is designed for permanent installation. Place the FluidWorker 50 on top of the tank. Make sure that the hoses are fixed and secured to avoid interference with the surrounding work area or equipment.
- The optional concentrate tank is attached separately to the system using magnetic brackets and has a size of 30 L.
- The optional concentrate tank must be filled with concentrate. This is used to adjust the concentration of the liquid.

5.1.1 Fluid levels

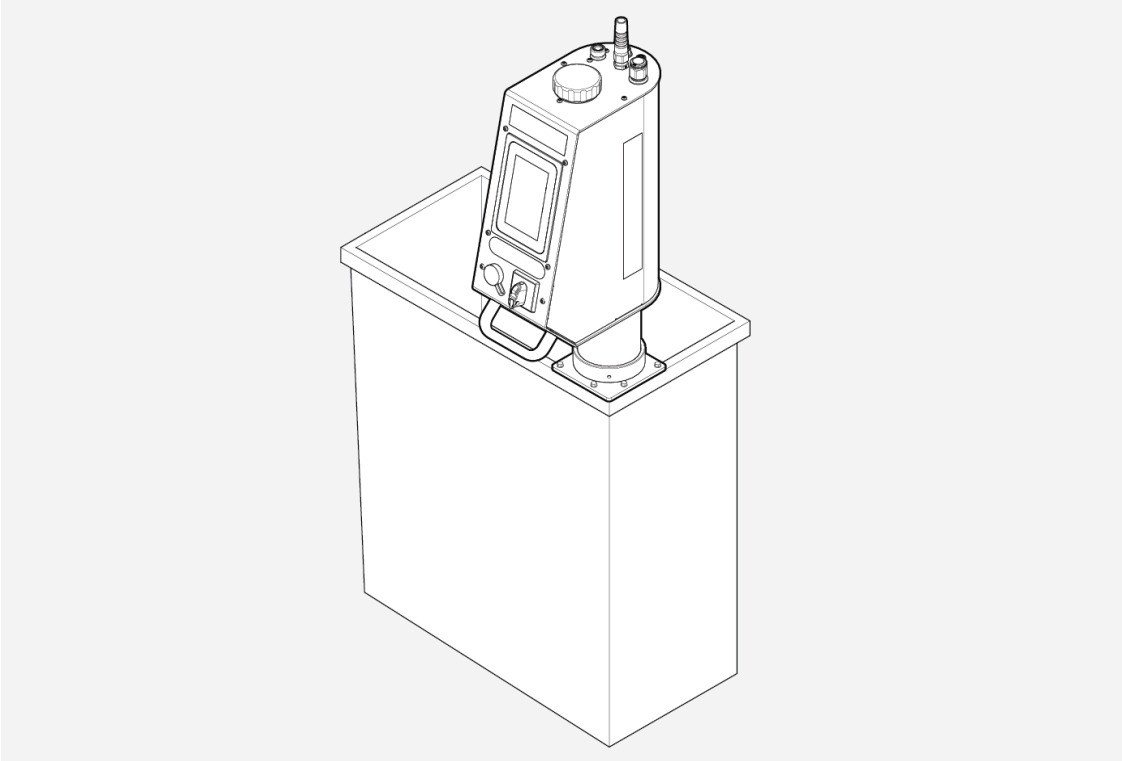


A. Tank bracket
B. Maximum allowed fluid level
C. Minimum installation fluid level
D. Setpoint. CNC operating fluid level (Minimum fluid level during CNC cycle)
E. Concentrate

5.2 Tools and Materials

Description	Note
Hex key	5 mm for locking the machine to the tank bracket.
Electric screwdriver	10 mm socket for self tapping screws.
Open end spanner	13 mm for magnetic bracket.
Tube cutter	16 mm (included).
Marking lable	Preferably white (included).
Tape measure	

5.3 Mechanical Installation

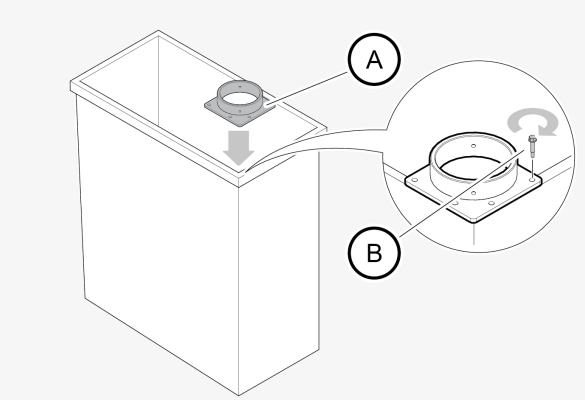


5.3.1 Installing the FluidWorker 50

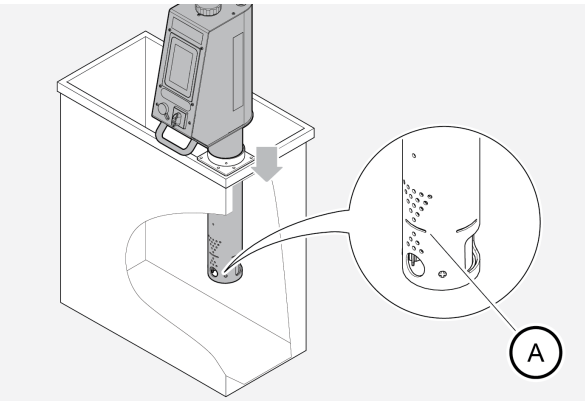
NOTE	The outlet direction is adjustable by turning the pipe body in the Tank Bracket. The electrical cabinet of the FluidWorker is adjustable relative the pipe body +-160 deg by using the handle.

NOTE	If the process fluid tank level varies greatly, the fluid level must be set at the lowest fluid level in the tank. Refer to the measurements on the illustration in chapter *5.1 Before Installation, on page 9*

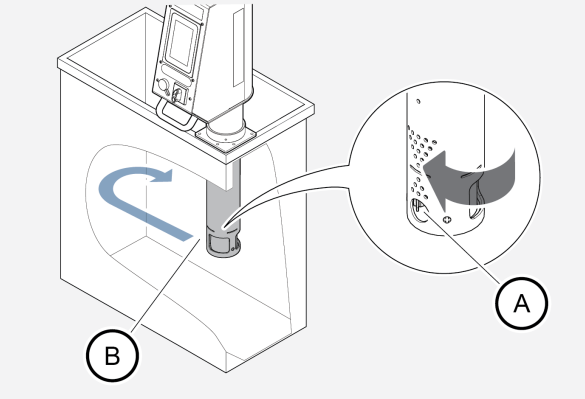
1. Read through the chapter before installation.
2. Install the tank bracket (A) on the inside of the process fluid tank. Use the supplied self-tapping screws (B).



3. Place the machine into the tank bracket. The FluidWorker 50 level marking (A) must be positioned at the lowest allowed fluid level (Minimum fluid level during the CNC-cycle). The tank fluid level at installation can be maximum 30 mm below the level marking. Tighten the socket screw with a 5 mm hexagon key.



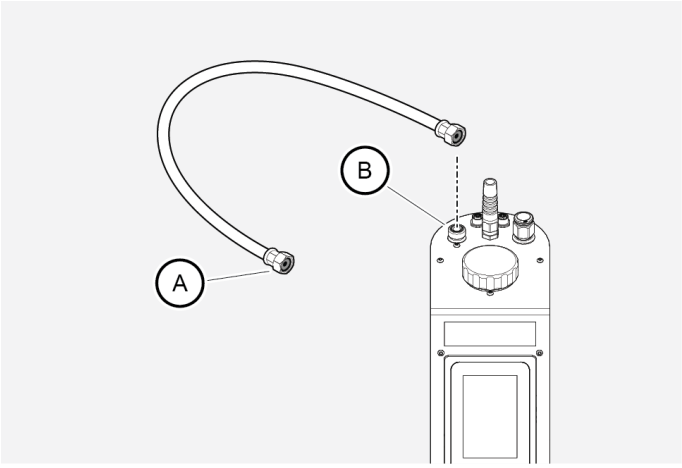
4. Adjust the angle of the ejector outlet (A) by turning the pipe body to create a good circulation in the tank, make sure the ejector outlet part of the pipe faces inwards into the tank (B). The circulation is needed to avoid short-circuiting of the flow between the inlet and outlet parts.



5. Turn the electrical cabinet of the FluidWorker 50 using the handle. For easy access.

5.3.2 Connecting the Water Supply

CAUTION	**Use only the water hose when connecting the FluidWorker 50 to a water supply. Never connect a fixed water connection directly to the FluidWorker 50.**
CAUTION	**Due to the maximum length of the water hose, the FluidWorker 50 must be installed within 2m from a water outlet.**
NOTE	It is important that the water has uninterrupted supply.
NOTE	The incoming water pressure in the FluidWorker 50 should be between 2,5 and 10 bar.



1. Connect and tighten by hand the water hose (A) to the water outlet.
2. Install and tighten by hand the water hose (A) to the fresh water inlet (B) on the FluidWorker 50.
3. Make sure that the water is on 24/7.

NOTE	The hose must be tightened by hand, not using any wrench tool since to high torque might damage the gasket.

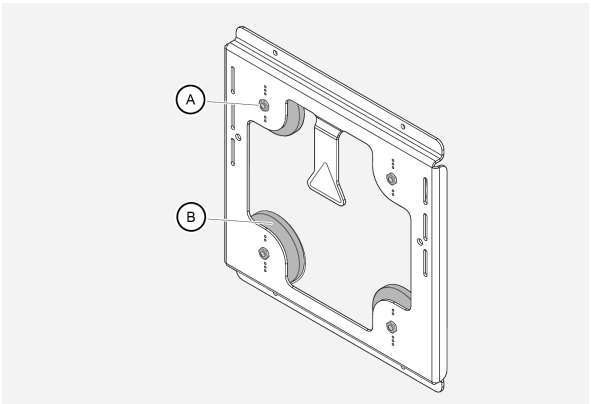
5.3.3 Connecting the Concentrate Tank

NOTE	The FluidWorker can either be connected to a 30 liter concentrate tank (optional), 200 liter barrel or IBC-tank. Always follow the recommendations below: • Tube material PA12 (Nylon) • Outside diameter 16 mm • Inside diameter 12 mm • Length < 4 m • Use included strainer

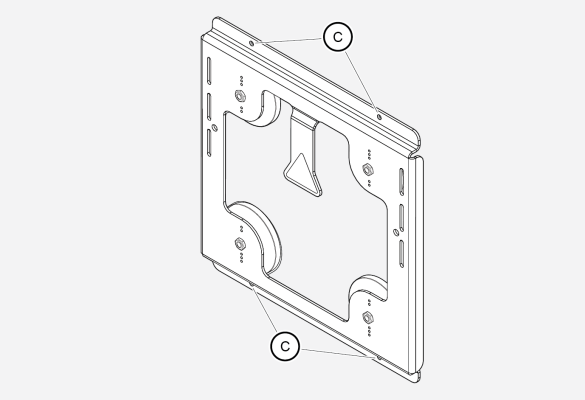
NOTE	When connecting the concentrate tank, refer to the measurements on the illustration in chapter *5.1 Before Installation, on page 9*

Connecting the optional 30L concentrate tank

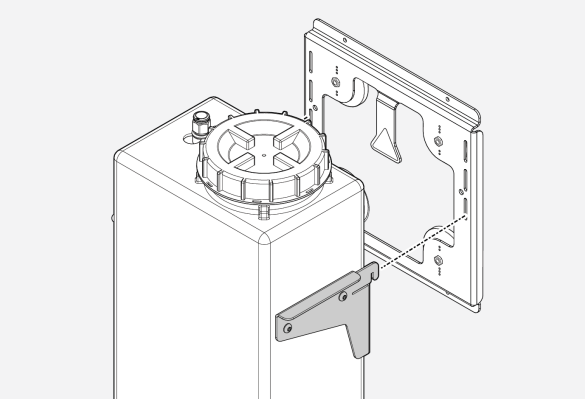
1. Make sure the intended vertical surface can carry a load of 35 kg. If the surface is not strong enough the bracket can still be used but only to stop the tank from tipping when standing on a horizontal surface.
2. Clean the intended surface with a degreaser.
3. Place the magnetic bracket at the desired height.
4. If the wall surface is magnetic: Turn the hex nuts, using a 13 mm key, counterclockwise until the magnets (B) reach the wall surface, and the torque is almost zero.
5. Make sure that the nuts are in line with the screw tops (A). Tighten the nuts with your fingers.



6. If the wall surface is not magnetic: Fasten the bracket with screws and the four holes (C) at the top and bottom of the bracket (screws not included).



7. Attach the tank to the bracket slits, at a desired height.



8. Cut the concentrate tube to length (maximum 4 m) and mark the tube 23 mm from the ends. Cutter and marking label are included.
9. Connect the tube between the inlet on top of the FluidWorker 50 and the concentrate tank. Note that the markings on the tube are in line with the push-in fittings. Don't bend the tube to less than 150mm radius as it might collapse.

Connecting a 200L concentrate barrel or an IBC-tank

1. Cut the concentrate tube to length (maximum 4 m) and mark the tube 23mm from the ends. Cutter and marker are included.
2. Connect the tube to the inlet on top of the FluidWorker 50 and to the strainer. Note that the markings on the tube are in line with the push-in fittings.
3. Place the strainer in the concentrate barrel. Don't bend the tube to less than 150mm radius as it might collapse.

5.3.4 Filling the optional Concentrate Tank

1. Check that the process fluid is within specifications.
2. Fill the concentrate tank with concentrated process fluid.

5.4 Electrical Installation

Before connecting the FluidWorker 50 to main power, make sure that it meets the following requirements:

- 230V
- 50Hz
- 60W
- RCD Circuit Breaker

1. Connect the power plug to the mains outlet.

   The installation is now finished. Go to *6 Operation, on page 18* and start to learn about how to use the FluidWorker 50.

6 Operation

6.1 Important Information

CAUTION

The water in the FluidWorker 50 must not freeze. Always drain the FluidWorker 50 before storage, transportation or when it is not in use.

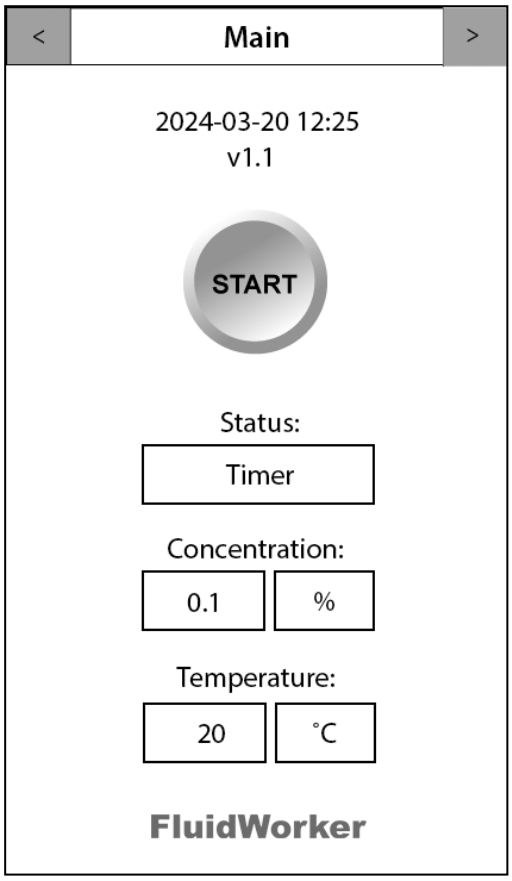
Using non-original components can damage the unit and the surrounding equipment.
Any attempt to change or modify existing equipment with non-original components invalidates the warranty.

6.2 Automatic Control System

NOTE	Learn how the control system works and set the parameters to match your system.

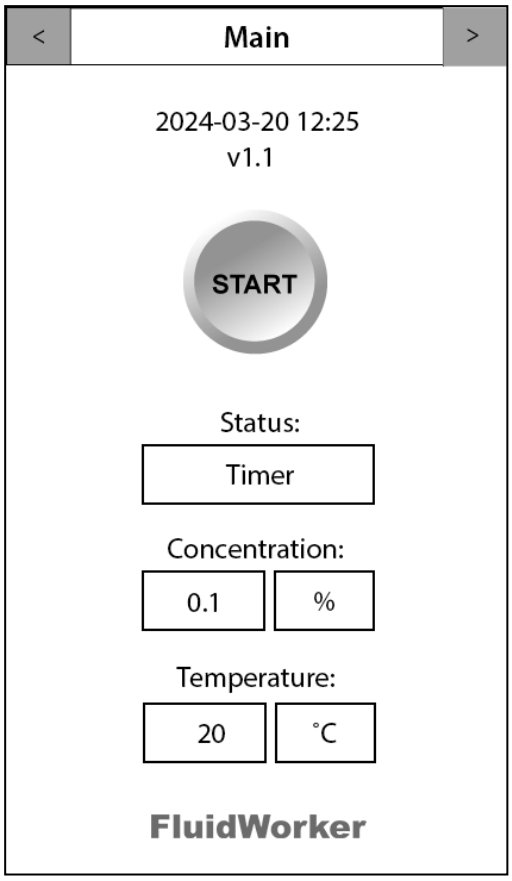
This chapter gives a basic understanding of the functions in the screen based control system of the FluidWorker 50.

6.2.1 Screens – General Functions



- Shows the title of the selected screen.
  This informs what function the screen has.
- The color of the title bar indicates the status of the machine:
- **Green**: the machine has been started and is running.
  Yellow: the power is on, the main switch is on.
  Also, Soft alarm, the machine will continue running but needs attending.
  Flashing red: hard alarm, the machine stops instantly.
- Use the arrows to navigate through the screens.
- On some screens it is possible to alter the settings on different parameters.
  Use the **- /+** buttons to reduce or increase the value.

6.2.2 Main screen



The Main Screen

"START"/"STOP" button: When the button has the text START, the FluidWorker 50 is ready to be started. If the button has the text STOP it can be stopped by the user.

Status: Shows the current status for the concentration control.

+ *Water 1* - Adding water

+ *Water 2* - Adding water

Mixing - Mixing process fluid

Measuring - Measuring concentration and temperature

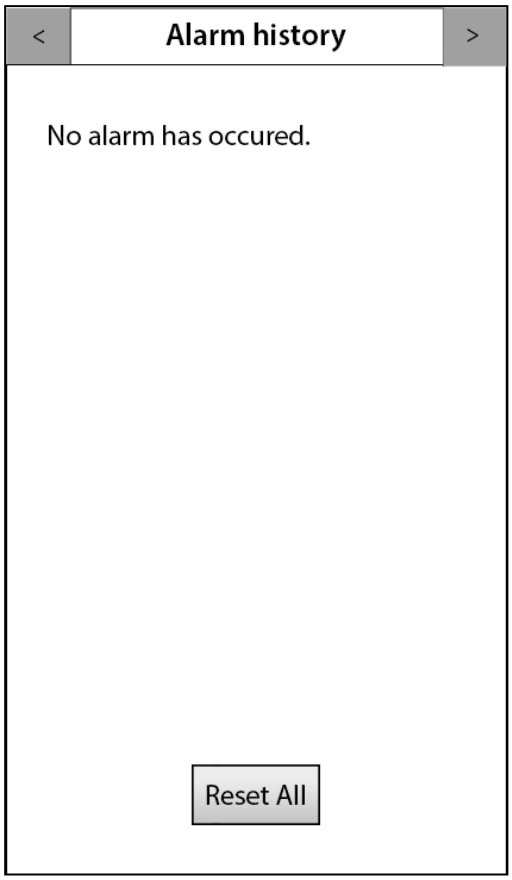
Cleaning 1 - Cleaning sensor

Timer - System idle

Concentration: Shows the value of the last concentration measurement of the fluid.

Temperature: Shows the fluids temperature of the last concentration measurement of the fluid.

6.2.3 Alarm History

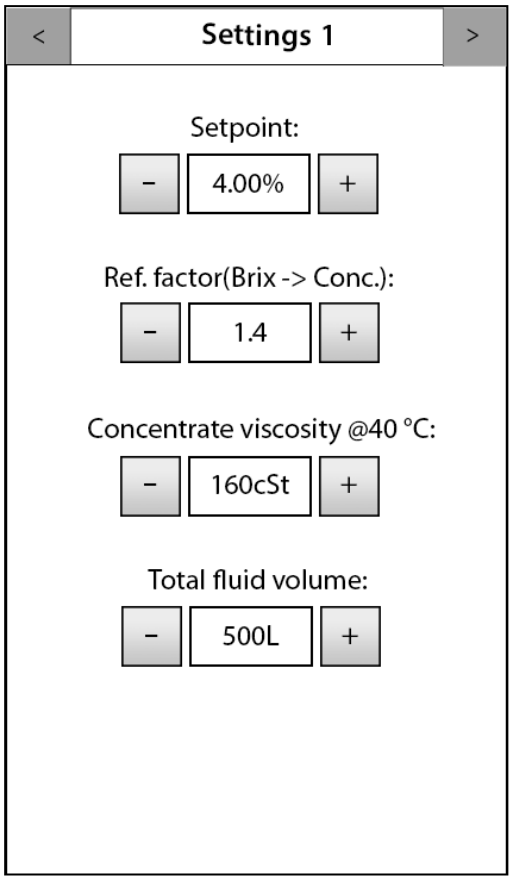


Alarm history Screen

On this screen all detected alarms are shown. The normal procedure to handle alarms is:

1. Read the alarm text.
2. Correct the error that caused the alarm.
   See the
3. Press the *RESET ALL* button to reset the alarms.
4. In case of a Hard Alarm, restart the FluidWorker 50.

6.2.4 Settings 1



Settings Screen 1

Setpoint: Set your desired fluid concentration.

Ref.factor(Brix ->Conc.): This value must be entered by the user. Refer to the manufacturer of the concentrate for the right value.

Concentrate viscosity @40 °C: This value must be entered by the user. Refer to the manufacturer of the concentrate for the right value.
To calculate viscosity from 20°C=>40°C use Visk@40°=visk@20°/2,6

CAUTION

It is important that the entered value for "total fluid volume" is fairly accurate (+-30%).
Entering the wrong "total fluid volume" may cause flooding of the process fluid tank.

Total fluid volume: The total volume of fluid in the system. This value must be entered by the user.

6.2.5 Settings 2

Settings Screen 2

Date and Time button: Used to change the date and time.

Password protection button: Used to enable user access login. When enabled and when the user makes any change to the system, a login screen is shown.

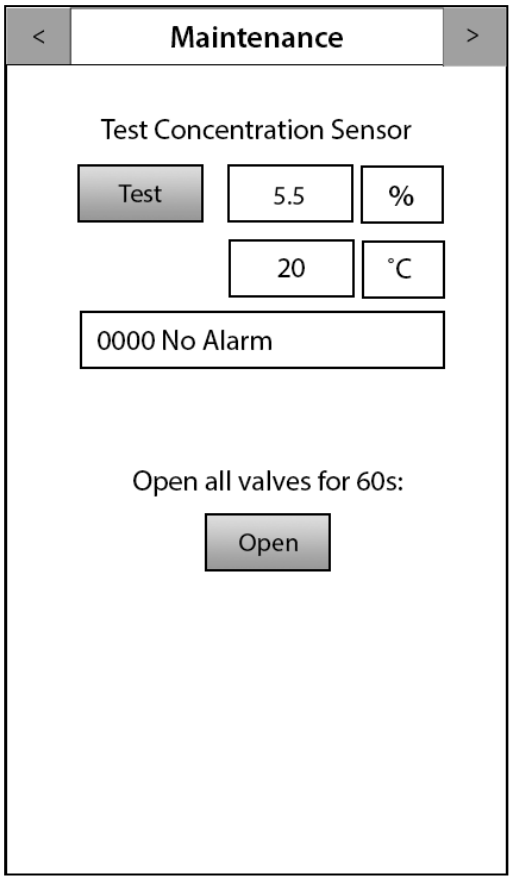
6.2.6 Settings, Password protection

When the user makes any change to the system, and the password is enabled, a login screen is shown.

Default password: 1234

After 10 minutes the user is automatically logged out.

6.2.7 Maintenance

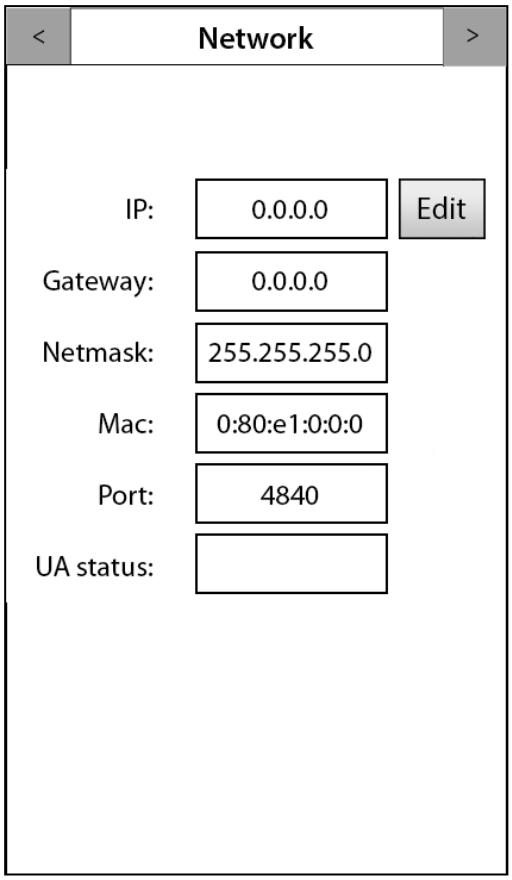


Maintenance Screen

Test Concentration Sensor: Test the concentration of the fluid placed on the sensor, make sure to clean the sensor before usage to get an accurate reading. This button is only visible when the unit is in standby mode (the power is on but not started).

Open all valves for 60s: Used to open all valves for 60 seconds. This button is only visible when the unit is in standby mode (the power is on but not started).

6.2.8 Network



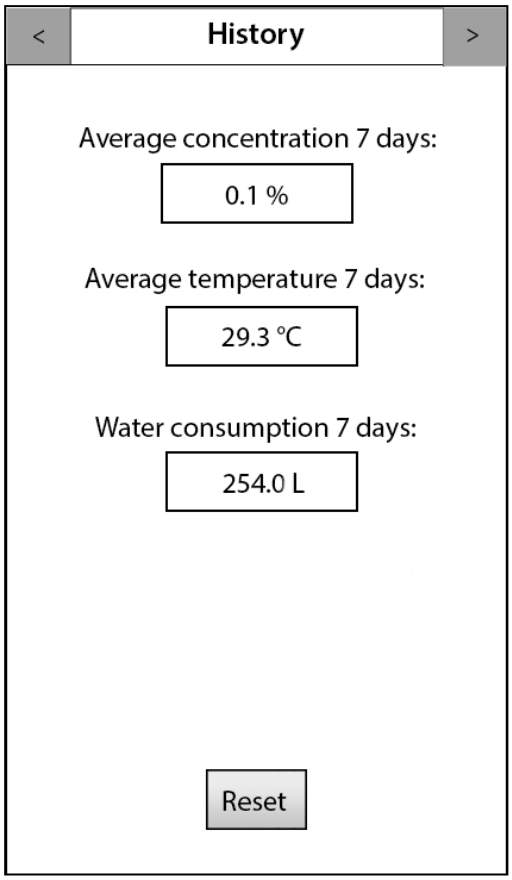
Network Screen

The screen shows a network that is not activated. Network parameters must be entered if the FluidWorker 50 is to be connected to a network.

UA Status code: Only after IP has been set.

- **Green** - Network work connection good .
- ***Red*** - Network work connection bad. Check entered IP settings and ethernet cable.

6.2.9 History



History Screen

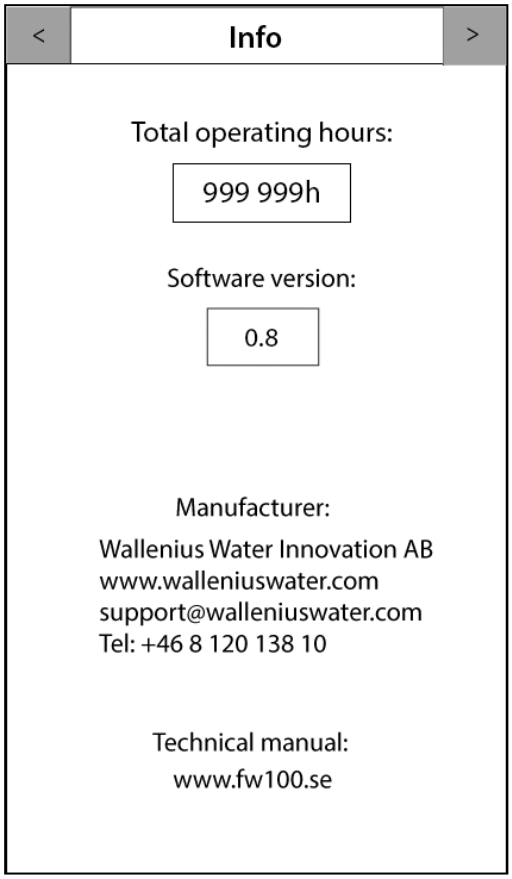
Average concentration 7 days: Shows the average concentration for 7 days in percent.

Average temperature 7 days: Shows the average temperature for 7 days in °Celsius.

Water consumption 7 days: Shows the approximate water consumption for 7 days in liters.

6.2.10 Information

NOTE	Please note the version number on this screen for any communication for identification.



Information Screen

On this screen the information about the software version and manufacturer information are shown.

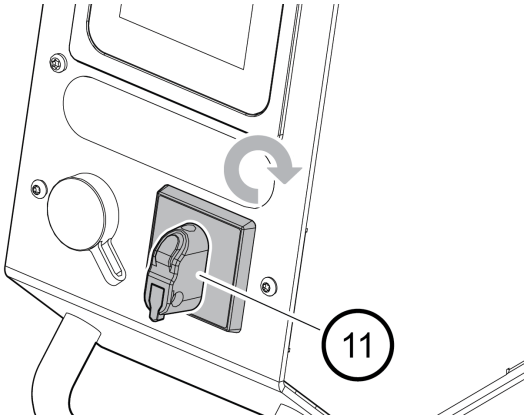
The total operating hours is also shown on this screen.

6.3 To start the FluidWorker 50

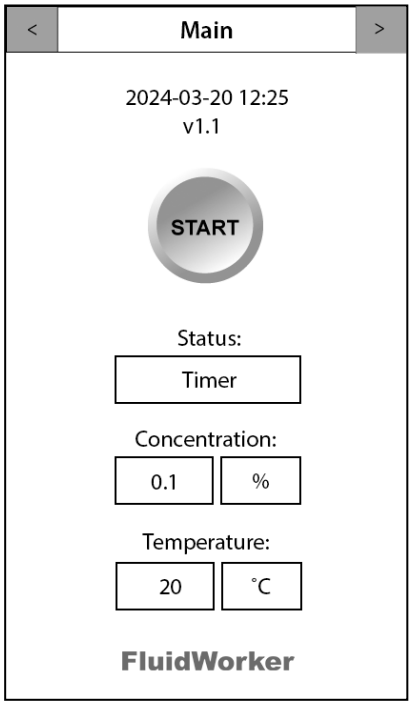
NOTE	Make sure the water is connected and turned on

CAUTION	**Make sure that you have set your desired parameters, if not go to *6.2 Automatic Control System, on page 19*.**

1. Turn on the main switch (11).

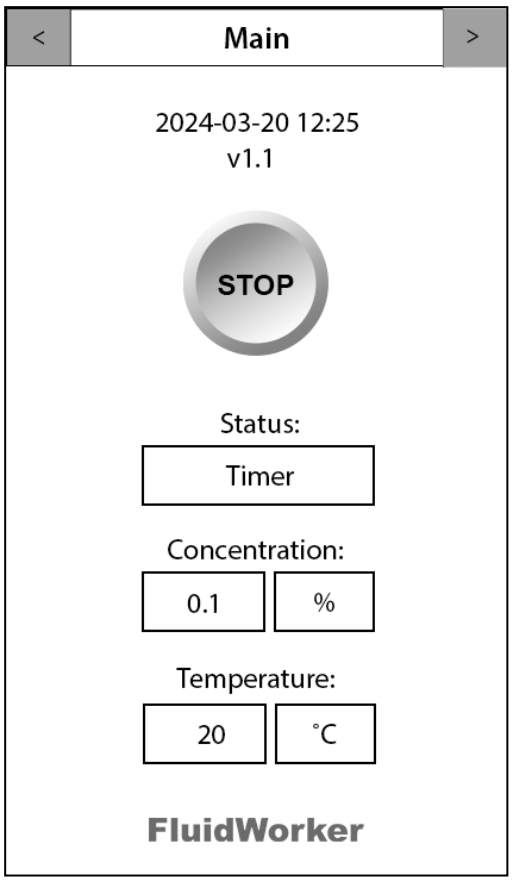


2. Press the *START* button on the touch display.
   If the system does not start, go to chapter .

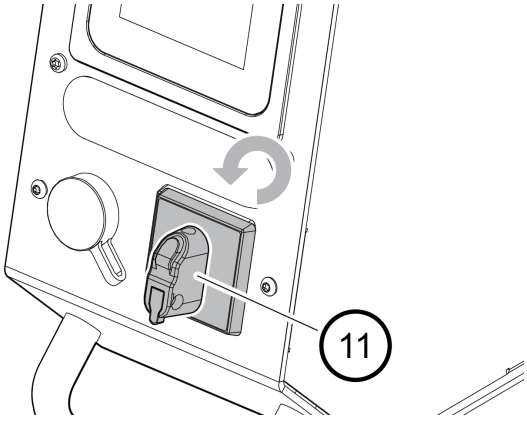


6.4 To stop the FluidWorker 50

1. Press the *STOP* button on the touch display, the system will stop after a few seconds.



2. Turn the main switch (11) to off.

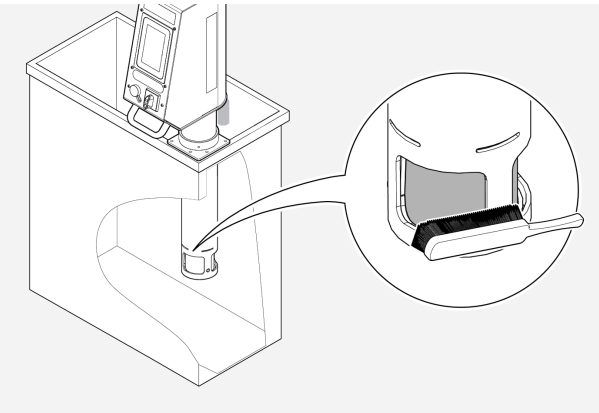


7 Service and Maintenance

Warning	**The unit operates with electrical power. Electrical power can cause electrical chocks. Disconnect power before service and use a residual current device, RCD.**
NOTE	Wallenius Water Innovation AB only guarantees correct function of the unit with original or specified components.

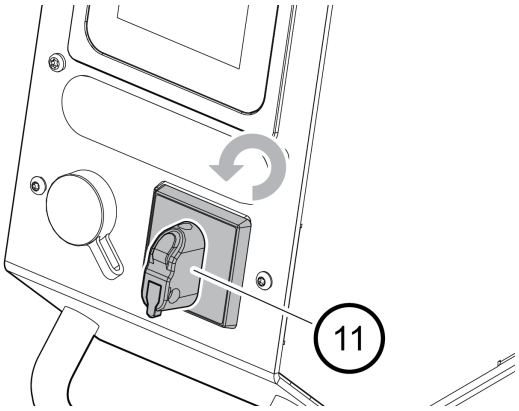
7.1 Cleaning of Inlet strainer (when needed)

1. With the FluidWorker 50 in place. Clean the inlet strainer with a nylon hand brush or similar.



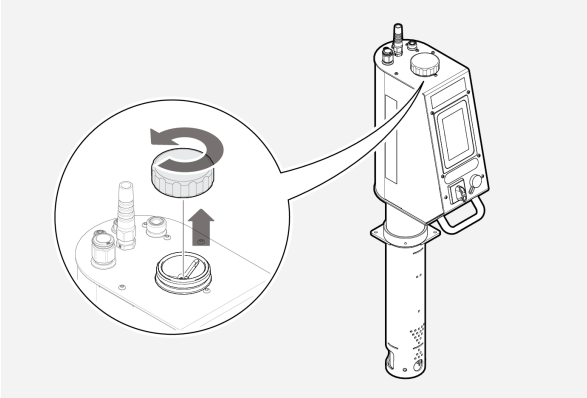
7.2 Inspection and cleaning of Concentration Sensor

1. Turn off the main switch (11).



2. Unscrew and remove the lid to the Concentration Sensor.

Warning	**Make sure to use safety glasses when removing the lid to the Concentration Sensor.**



3. Wipe the Concentration Sensor clean with a dry cloth. It is essential that the round glass surface is absolutely clean.

NOTE	Use a clean cloth when cleaning the sensor to avoid damaging the surface.

4. Visually inspect the glass surface. Repeat cleaning if needed.
5. Screw the lid back on. Make sure the lid is tightly fastened.

7.3 Software/Firmware Upgrade

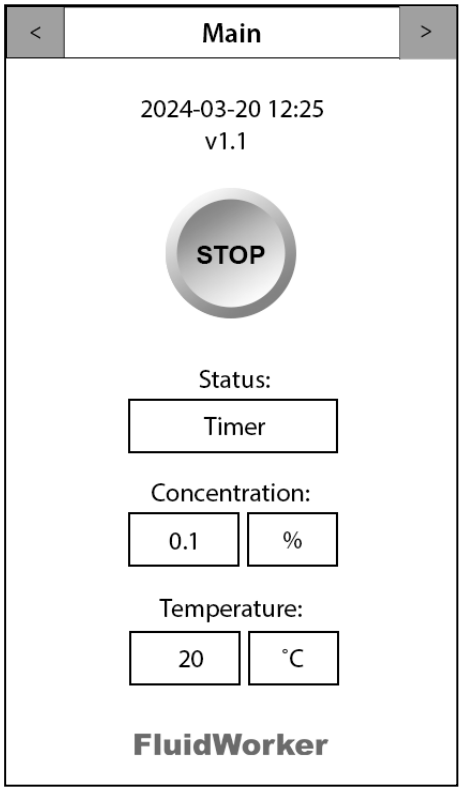
NOTE	All parameters are set to default, including the date and time, during a software update.

If the software or firmware is subject for upgrade, you will receive an e-mail with the upgrade enclosed.

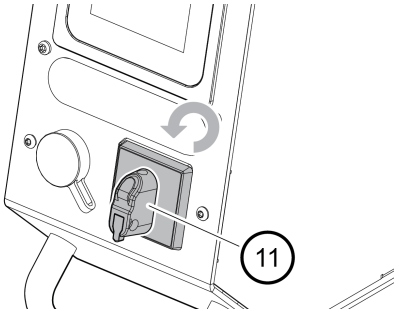
Use the original USB drive delivered with the FluidWorker 50. The USB is located in the USB-port on the front of the machine. If the USB is missing replace with a formatted (FAT32) ultrafit USB stick (min 512 MB).

7.3.1 Procedure

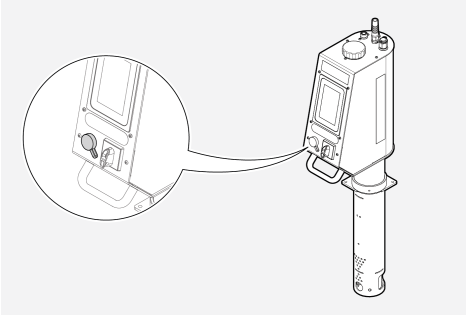
1. Put the upgrade file, into a new folder called "firmware", onto the USB-stick.
2. Press *STOP* to switch off the FluidWorker 50.



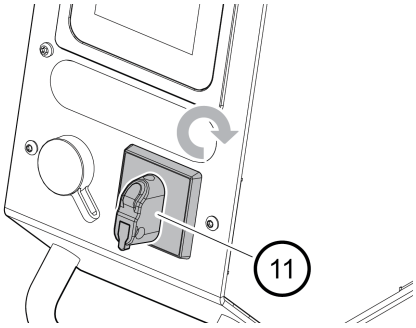
3. Turn off the main switch (11).



4. Remove the lid to access the USB-port.



5. Insert the USB-stick into the USB port.
6. Turn on the main switch (2). The system will automatically upgrade.



7. Wait until the system is upgraded.
   The upgrade takes less than 2 min and includes a system reboot.
8. Remove the USB-stick.
9. Delete the "firmware" folder from the USB stick. Leaving firmware on the USB may lead to accidental downgrade of future software.
10. Insert the USB-stick into the USB port.
11. Make a note in the *A.2 Maintenance Record, on page 44* that the system is upgraded and to which revision.

8 Troubleshooting

8.1 Alarm List

NOTE	Soft alarms will not shutdown the FluidWorker 50. Hard alarms will shut down the FluidWorker 50.

NOTE	The alarms are indicted on the signal tower accessory: • Soft alarm gives a yellow light in the signal tower accessory. • Hard alarms gives a red light in the signal tower accessory.

Soft alarms only informs that service is required.

8.2 Soft Alarms

Soft Alarms	Probable cause / solution
Alarm 01 - Check water supply	Low water pressure at pressure sensor. 1. Check that the water supply to the system is turned on. 2. Water pressure below 2.5bar. 3. Broken water valve. Contact your supplier. 4. Faulty pressure sensor. Contact your supplier.
Alarm 02 - Clean strainer	Pressure drop over strainer is too high. 1. Inlet strainer in the bottom of the product is blocked. Clean strainer, refer to *7.1 Cleaning of Inlet strainer (when needed), on page 30*. 2. Faulty pressure sensor. Contact your supplier.
Alarm 03 - Fill concentrate tank AND clean sensor	Air in concentrate tube detected. 1. Fill concentrate tank and clean the concentration sensor with a clean soft cloth. 2. Check the tube connection between product and concentrate tank, also tube inside concentrate tank. No air must leak into the tube (negative pressure). Clean the concentration sensor with a clean soft cloth.
Alarm 04 - Sensor high temperature	Temperature error code from concentration sensor. 1. Fluid or ambient temperature is too high. 2. Possible broken concentration sensor.
Alarm 05 - Check date and time	Incorrect time and date set, machine has been disconnected from mains too long. 1. Set correct date and time.

8.3 Hard Alarms

Hard Alarms	Probable cause / solution
Alarm 51 - Clean sensor & check concentration	Concentration sensor can't measure. 1. Dirty sensor. Clean concentration sensor thoroughly with a clean soft cloth, refer to *7.2 Inspection and cleaning of Concentration Sensor, on page 31*. 2. Concentration is outside of sensor range. Check with refractometer. 3. Very poor fluid condition or too high tramp oil content. 4. Broken concentration sensor. Contact your supplier.
Alarm 52 - High water consumption	Water fill >50% of Total fluid volume setting. 1. Too low fluid level in process tank. Manually adjust fluid level. 2. FluidWorker installation height. Adjust height of FluidWorker. 3. Broken or blocked level switch. Contact your supplier.
Alarm 53 - Stopped due to mains voltage or switch	Power was disconnected while machine was running. 1. Press stop before disconnecting power or using main switch.
Alarm 54 - Check process fluid level	Fluid level in process tank is lower than limit, indicated by pressure sensor 1. Adjust fluid level or product level setting. Refer to the fluid levels in chapter *5.1 Before Installation, on page 9* 2. Broken pressure sensor. Contact your supplier.
Alarm 55 - Clean strainer	Pressure drop over strainer is too high (if strainer was not cleaned after Alarm 02) 1. Inlet strainer in the bottom of the product is blocked. Clean strainer, refer to *7.1 Cleaning of Inlet strainer (when needed), on page 30*. 2. Faulty pressure sensor. Contact your supplier.
Alarm 56 - Valve failure V1	Valve V1 failed to close. 1. Contact your supplier.
Alarm 57 - Valve failure V3	Valve V3 failed to close. 1. Contact your supplier.
Alarm 58 - Fill concentrate tank and clean sensor	Air in concentrate tube detected and conenctration is >2% below set point (to prevent corrosion) 1. Fill concentrate tank and clean the concentration sensor with a clean soft cloth. 2. Check the tube connection between product and concentrate tank. Also check the hose inside the concentrate tank. No air must leak into the tube (negative pressure). Clean the concentration sensor with a clean soft cloth.
Alarm 59 - Sensor not responding	No communication between HMI and concentration sensor. 1. Contact your supplier.
Alarm 60 - No level switch detected	No communication between HMI and level switch. 1. Contact your supplier.

9 Spare Parts/Accessories

All spare part orders must include the following information:

- the FluidWorker 50 serial number.
- the article number of the spare part if it is visible.
- the spare part description (name).
- ordered quantity.

The spare parts list below include the most commonly used and ordered items. For other parts, please contact your distributor.

Spare parts

Part number	Description
39-01-0155	Concentrate hose including strainer, 4m x 16mm
39-01-0156	Box for FluidWorker 50 with foam insert

Accessories

Part number	Description
39-01-0157	LED signal tower, green, yellow, red incuding 5m cable (M12D)
39-01-0158	Concentrate tube connector kit, 4x90° fittings and cutter
39-01-0159	Concentrate tank, 30L, with magnetic bracket.

10 Specifications

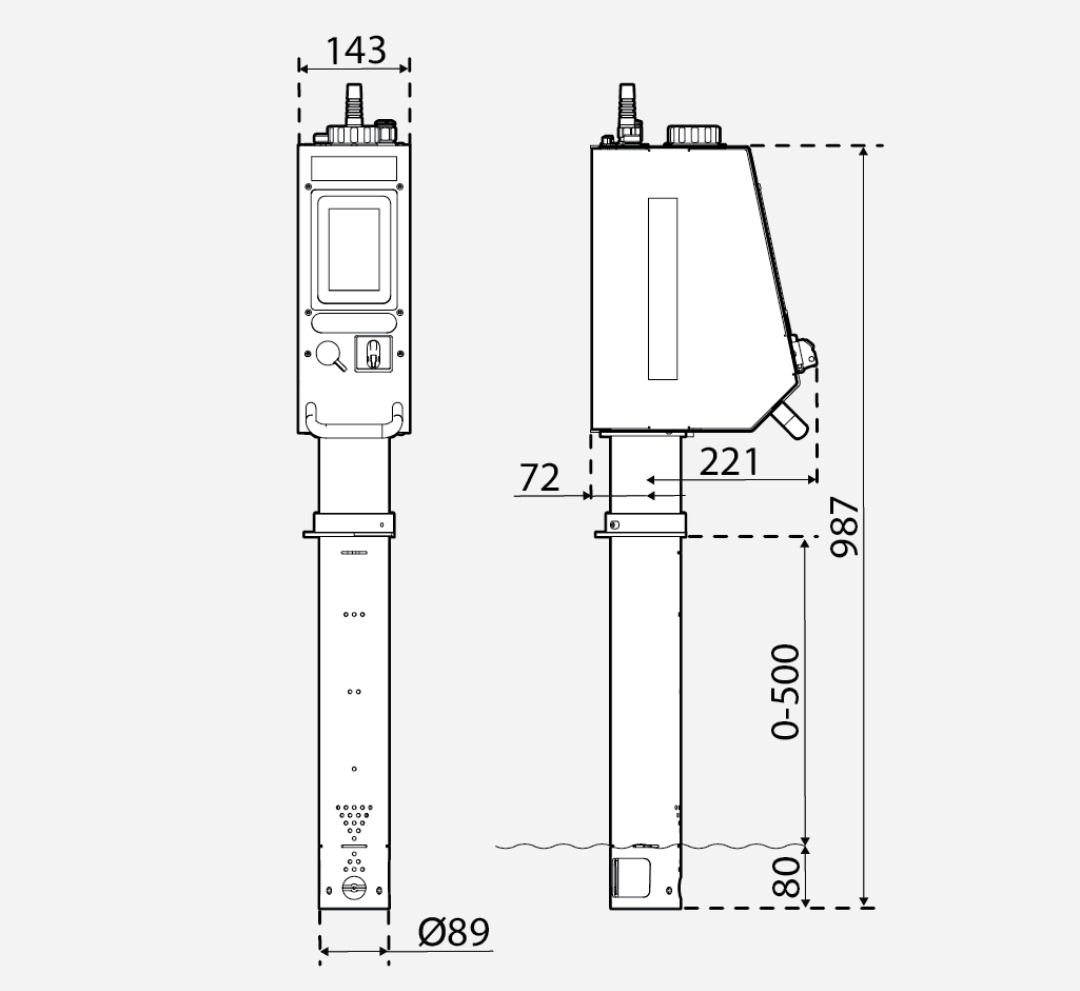
10.1 Technical Specification

Description	FluidWorker 50 Data
General Specification	
Concentration range and accuracy	2-15%±1% (BRIX sensor)
Fluid volume	0.2-1.5 m³
Recommended fluids	Emulsions & micro-emulsions
Concentrate viscosity	5-200cSt at 40°C
BRIX cleaning system	Automatic
Monitoring & Interface	
Human Machine Interface, HMI	5” colour touch screen
Weekly data / consumption	Concentration, Temp / Water
Network connection	OPC-UA, Ethernet (M12 D)
Update & log	USB
Mechanical & Electrical	
Weight / Weight including packing.	14,8 kg / 17,3 kg
Concentrate hose length	4 m
Fluid filtration	Inlet strainer
IP-Class	IP 21
Max ambient and fluid operating temperature	45°C
Water hose length (included)	2 m, ½” female
Incoming water pressure	2,5-10 bar
Power supply/consumption	230V 1-phase, 50 Hz/0-60W
Electrical cable length	3.7 m
Accessories	
Concentrate tank	30L with magnetic bracket
Signal tower	Green yellow red, 5m cable

10.2 Dimensions

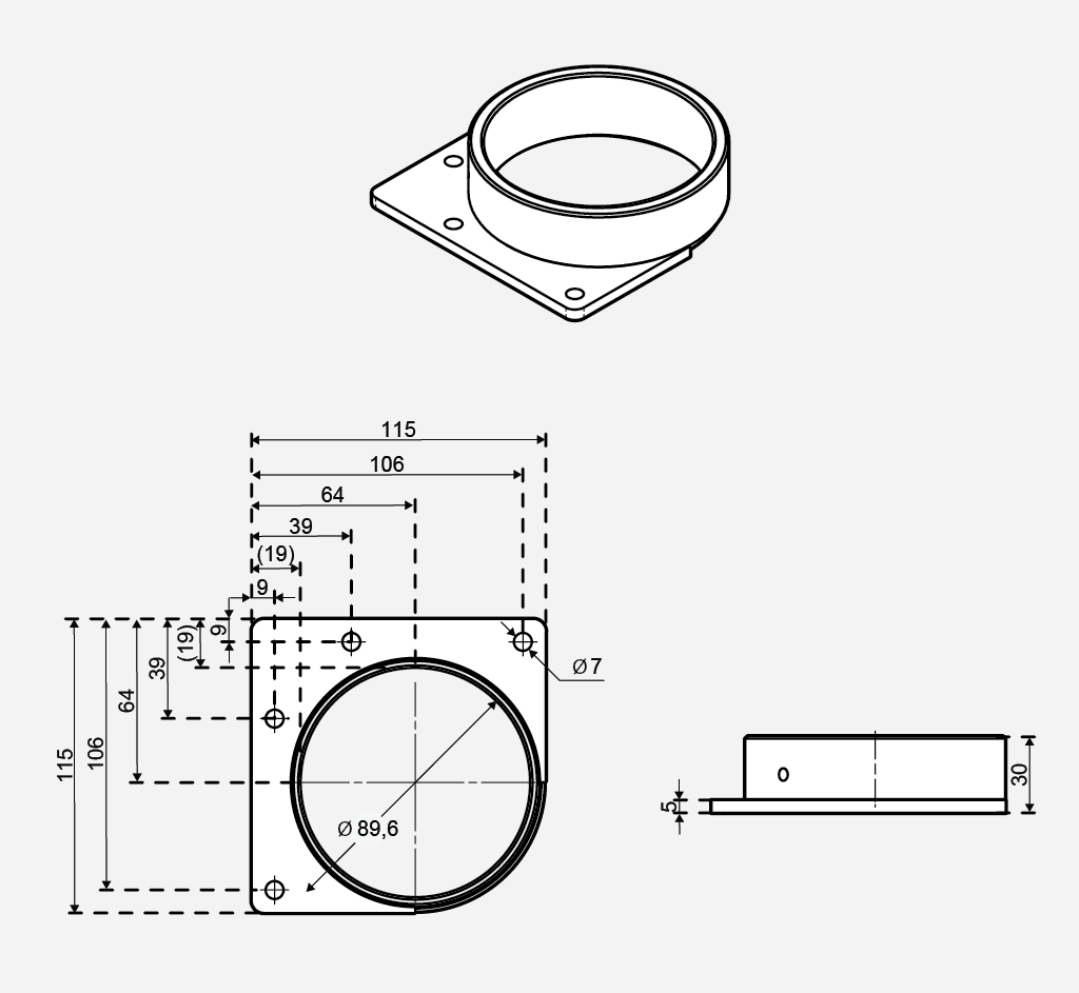
10.2.1 FluidWorker 50

NOTE	The dimensions below are in mm.



10.2.2 Bracket

NOTE	The dimensions below are in mm.



A Appendix

A.1 Electrical Drawings

IO_POWER_BOARD

X21: DI_1 (4), DO_2 (3), 0 VDC (2), +24VDC (1)

Internal PCB connections

X25: DO_0 (1), DO_7 (2), DO_6 (3), +24VDC (4), 0 VDC (5)

X23: DO_4 (1), +24VDC (2)

X22: DO_3 (1), +24VDC (2)

X20: +24VDC (1), DO_2 (2), DO_1 (3), +24VDC (4)

X5 LS1: COM (1), NC (2), NO (3)

X2 MAINS: L (1), N (2), PE (3)

Black

Brown

White

Blue

Grey

Pink

Green

Yellow

Red

Blue

Brown

White

W1-1-BR

W1-2-BL

Y1

-GND001

W2

Valve V4

Valve V3

Valve V2

WATER INLET V1

W3

M12 A Panel connector

-GND002

For optional Signal Tower

Q1 T1 T2 T3 L1 L2 L3 20A

W1

W1-L

W1-N

W1-PE

W1

L N PE

Rev	Revised	Date	Description	Approved
1	owstpr	2025-04-01	FIRST RELEASE	owhefe

Title
FluidWorker 50
Display unit: I/O Power Board
IO connections

WALLENIUS WATER INNOVATION

Drawing Type
Circuit Diagram

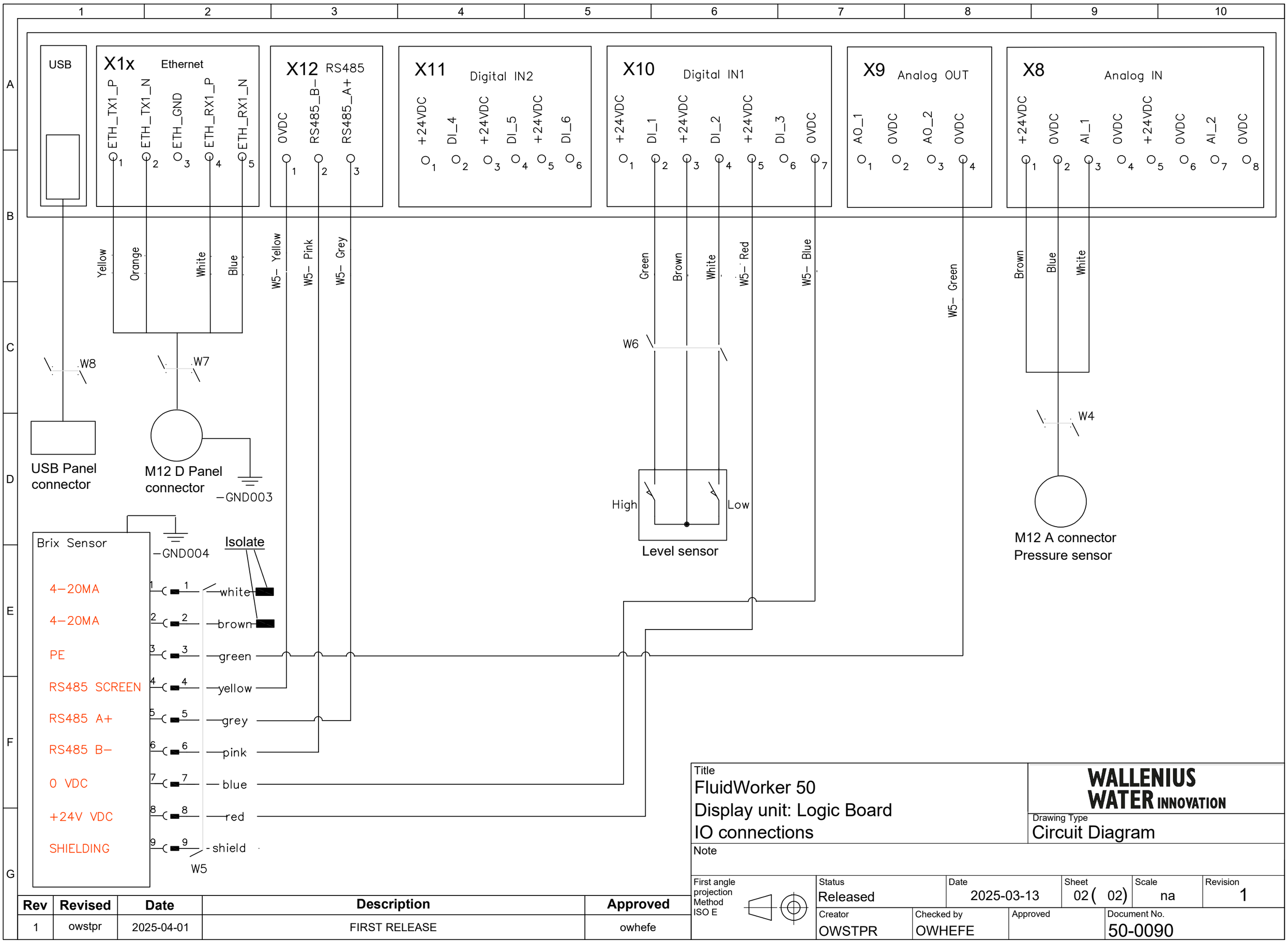
Note

First angle projection Method ISO E

Status	Date	Sheet	Scale	Revision
Released	2025-03-13	01 (02)	na	1

Creator	Checked by	Approved	Document No.
OWSTPR	OWHEFE		50-0090

A3



Rev	Revised	Date	Description	Approved
1	owstpr	2025-04-01	FIRST RELEASE	owhefe

Title
FluidWorker 50
Display unit: Logic Board
IO connections

WALLENIUS WATER INNOVATION

Drawing Type
Circuit Diagram

Note

First angle projection Method ISO E	Status	Date	Sheet	Scale	Revision
	Released	2025-03-13	02 (02)	na	1

Creator	Checked by	Approved	Document No.
OWSTPR	OWHEFE		50-0090

A3

A.2 Maintenance Record

Date	By	Action	Comments/Notes

A.3 Exporting data via OPC UA

To enable the FluidWorker 50 in a OPC UA network:

1. Set up the addresses (Example “192.168.250.11”) and port setting (Example “4840”) using the FluidWorker 50 HMI page named “Network”.
2. Verify the network connection by pinging the FluidWorker 50 from a computer.
3. Ensure endpoint URL in the factory system (Example “opc.tcp://192.168.250.11:4840/”).

Description of available OPC UA parameters in FluidWorker 50.

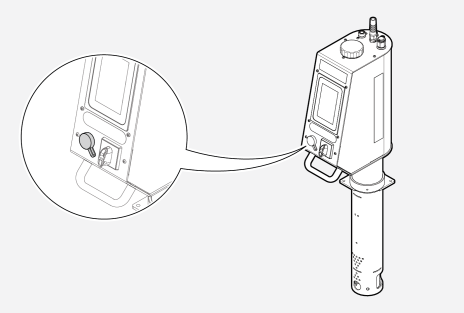
FluidWorker 50 OPC UA parameters			
Name	**Type**	**Range**	**Description**
A. Last_Measurement			
A1. Concentration	String	0-46.5	Latest measured concentration value (%). **Example:** “10.3 %”. (Identifier: FW_D1_ Concentration) Concentration = Brix * Ref_factor
A2. Temperature	String	5.0-55.0	Latest measured temperature value (degree Celsius). **Example:** “34.2 C”. (Identifier: FW_D1_ Temperature)
B. Average_Measurements			
B1. Concentrate Consumption	String	0 - 999999999	7-day average concentrate consumption (litres). **Example:** “NNN L”. (Identifier: Concentrate_ Consumption)
B2. Concentration	String	0-46.5	7-day average concentration (%). **Example:** “6.3 %”. (Identifier: Average_ Concentration)

FluidWorker 50 OPC UA parameters			
B3. Temperature	String	5.0-55.0	7-day average (degree Celsius). **Example:** “34.2 C”. (Identifier: Average_ Temperature)
B4. Water Consumption	String	0.0 – 99999999999999	7-day average water consumption (litres). **Example:** “50.3 L”. (Identifier: Water_ Consumption)
C. Alarms			
C1. Hard alarm	String	true/false	If the unit has a hard alarm, this value is “true”. A hard alarm will stop the unit. (Identifier: Hard_ Alarm)
C2. Soft Alarm	String	true/false	If the unit has a soft alarm this value is “true”. A soft alarm will not stop the unit, but inspection is needed. (Identifier: Soft_ Alarm)
D. UnitInformation			
D1. Status		ON/OFF	**Example:** “ON” (the ON button has been pushed on the FluidWorker 50 – it is running). **Example:** “OFF” (the OFF button has been pushed on the FluidWorker 50 the system is not running). (Identifier: System_ Status)
D2. FirmwareVersion		N.NN	Firmware version **Example:** “0.08” (Identifier: 50229)
D3. UnitTime		NA	Time setting on the FluidWorker 50 unit. **Example:** “2022-03-08T14:23:07.000Z” (Identifier: 50230)

A.4 Exporting data via USB

This instruction assumes that the original USB drive is inserted into the FluidWorker as it was delivered.

1. Press STOP on the FluidWorker 50.
2. Turn off the main switch and wait 10 seconds.
3. Turn on the main switch.
4. Wait for 60 seconds while the logs are written to the USB drive.
5. Remove the lid to access the USB port.



6. Remove the USB drive and copy the files from the folder LOGFILES to a computer.
7. Reinsert the USB drive.
8. Press START on the FluidWorker 50.

WALLENIUS WATER INNOVATION

DECLARATION OF CONFORMITY

We,

Wallenius Water Innovation AB

Junohällsv. 1
SE-112 64 STOCKHOLM
SWEDEN

declare under our sole responsibility that the products:

- FluidWorker 50, Part no: 15-01-0120

to which this declaration relates is in conformity with the following laws, standards or other named normative documents:

Low Voltage Directive (LVD) 2014/35/EU:

EN 60204-1:2018	Safety of machinery - Electrical equipment of machines

Directive of Electromagnetic Compatibility 2014/30/EU:

EN 61000-6-2:2019	Immunity for industrial environments
EN 61000-6-4:2019	Emission standard for industrial environments

Place and date of signature: Stockholm 2024-12-11

Signature of authorized person:
Ulf Arbeus, MD