

INDUSTRIAL WATER EQUIPMENT

Instruction manual for ultra filtration plants



Instruction manual

Software version 2.00

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General description

The UF3020 operating control is used to fully automatically monitor and control very simple ultra filtration water treatment systems.

The basic values that have been programmed into the operating control can be changed at any moment and are not erased in case of a power failure.

The control has seven switching steps, namely "Standby", "Filtration", "Pre flush", "Flush1", "Backwash", "Flush2" and "Alarm".

The steps "Pre flush", "Flush1" and "Flush2" are programmable to be switched off and on.

The state of the outputs during a step is programmable for each step.

"Standby" step

During standby the low level (RW tank) and high level (CW tank) will be checked. When both are not activated the installation will switch to "Pre flush" (if activated in step 2.1) and then to "Filtration".

When the push button will be pressed the controller will start a flush.

All outputs free programmable.

The following values are monitored:

- Low level, raw water tank
- High level, clean water tank

"Filtration" step

During filtration the low level (RW tank) and high level (CW tank) will be checked. When one or both are activated the installation will switch to standby.

When the push button will be pressed the controller will start a flush.

After a programmed interval time the installation will switch to "Flush1" (if activated in step 2.1).

All outputs free programmable.

The following values are monitored:

- Overpressure
- Low level, raw water tank
- High level, clean water tank
- Push button

"Pre flush" step

This step has to be activated in step 2.1 (PFL).

The step "Pre flush" will be activated after switching power on (when program step 4.1 is programmed for 'PFL') or when the installation will go to the "Filtration" step after "Standby".

After a programmed time the installation will go into "Filtration".

All outputs free programmable.

The following values are monitored:

- Overpressure

"Flush 1" step

This step has to be activated in step 2.1 (FL1).

The installation will switch to "Flush 1" after the "Filtration" time has passed.

You can also start "Flush 1" manually by pressing the push button during "Standby" or "Filtration".

After a programmed time the installation will switch to "Backwash".

All outputs free programmable.

The following values are monitored:

- Overpressure

"Backwash" step

The installation will switch to "Backwash" after the "Flush 1" time has passed. After a programmed time the installation will switch to "Flush 2",

All outputs free programmable.

The following values are monitored:

- Overpressure

"Flush 2" step

This step has to be activated in step 2.1 (FL2).

The installation will switch to "Flush 2" after the "Back wash" time has passed. After a programmed time the installation will switch to "Filtration" or "Standby" (depending on the state of the level switches).

All outputs free programmable.

The following values are monitored:

- Overpressure

"Alarm" step

The installation will switch to "Alarm" when there is a overpressure situation or when program step 4.1 is programmed "AL".

During alarm the over pressure switch and the button will be checked. When pressing the button and the pressure is ok the installation will proceed the process step that was interrupted. The interval time for the flush and back wash steps will also proceed and not be reset.

All outputs will be deactivated.

The following values are monitored:

- Overpressure
- Push button

Function display

First LCD line

The first line of the LCD display shows the actual phase of the system: "Standby", "Filtration", "Pre flush", "Flush1", "Backwash", "Flush2", "Alarm".

Second LCD line

Depending on the current phase of the system, the second line of the LCD display shows operating values.

Second LCD line for the "Standby" step

Standby
RW empty/CW low

Raw water tank empty and clean water tank not full.

Standby
RW high /CW full

Raw water tank not empty and clean water tank full.

Standby
RW empty/CW full

Raw water tank empty and clean water tank full.

Second LCD line for the "Filtration" step

Filtration
Time 10m

Filtration
Time 59s

The second line indicates the remaining time until "Flush 1" will start.
When the start is within 60 seconds the remaining time will be displayed in seconds.

Second LCD line for the "Pre flush" step

Pre flush
Time 10s

The second line indicates the remaining time of "Flush 1".

Second LCD line for the "Flush 1" step

Flush 1
Time 10s

The second line indicates the remaining time of "Flush 1".

Second LCD line for the "Backwash" step

Back wash	
Time	10s

The second line indicates the remaining time of "Backwash".

Second LCD line for the "Flush 2" step

Flush 2	
Time	10s

The second line indicates the remaining time of "Flush 2".

Second LCD line for the "Alarm" step

Alarm	
Overpressure	

Alarm	
Supply failure	

The second line indicates the cause of the alarm situation.

"Overpressure" : Overpressure situation during flushing or backwash.

"Supply failure" : Controller switched on and step 4.1 programmed at "AL".

Info display

The information key can be used to retrieve various information. When you press the information key, the first information is displayed. You can obtain further information by pressing the key again.



Input switch positions

<p style="text-align: center;">Input OP- LL- HL-</p>

Here the current switch positions of the input functions are displayed ("-" input not activated, "|" input activated) :

OP = over pressure switch
LL = low level raw water tank
HL = high level clean water tank

Output switch positions

<p style="text-align: center;">Output</p>	<p style="text-align: center;">ABC -</p>
--	---

Here the current switch positions for the IV, PU and AL outputs are displayed.

A = IV
B = PU
C = AL

Software version

Software version
UF3020 1.01.00

The factory regularly updates the software. Changes are made as necessary to adapt the product to the latest insights and requirements. Displayed is the number of the built-in version.

Input functions

The 'Over pressure' (CC), 'Low level raw water tank' (LP) and 'High level clean water tank' (FU) inputs are standard available.

Overpressure

The 'Over pressure' (CC) input is used to prevent the installation from to high pressures.

In step 3.3 you can program the delay before the system is switched to 'Alarm'. You can leave the 'Alarm' step by pressing the button when the when over pressure situation is solved.

The input function is active when the contact is open.

Low level raw water tank

The input function 'Low level raw water tank' (LP) is used for checking the level of water in the raw water tank.

The controller will respond immediately when the contact is opened and will switch into the step "Standby".

In step 3.1 you can program the delay for the installation to switch back the step "Filtration" (through the step "Pre flush", if programmed in step 2.1).

The controller is detecting low level when the contact is open.

High level clean water tank

The input function 'High level clean water tank' (FU) is used for checking the level of water in the clean water tank.

The controller will respond immediately when the contact is opened and will switch into the step "Standby".

In step 3.2 you can program the delay for the installation to switch back the step "Filtration" (through the step "Pre flush", if programmed in step 2.1).

The controller is detecting high level when the contact is open.

Output functions

The outputs are free programmable for each process step.

There are no special output functions available.

Display and modification of set points

Attention

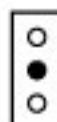
Changing settings may only be done by qualified electrical engineers.

When the system is put into operation, the operational data of the reverse osmosis system can be controlled by entering basic values.

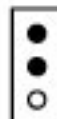
You can change these values at any time and they are not erased in case of a power failure.

To prevent unwanted changes in the programme, you must keep the key depressed for four seconds before the system allows you to make changes

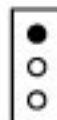
With the same key you can then browse through the programming.



You leave the programming mode automatically about two minutes after the last keystroke or by pressing the key combination as shown.

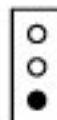


With the upper key you can move the cursor.



By pressing the lower key you can change numeric values within the given range that you have first marked with the cursor.

For questions with a choice, you can also use this key to switch between '-' en '|'.



1. Language

Step no.:	1.1
D N1 <u>E</u> F	

In this step you can set the language.

2. Process step times

Step no.:	2.1
PFL-FL1-FL2-	

In this program step you can activate or deactivate the steps "Pre flush", "Flush 1" and "Flush 2".

PFL = "Pre flush"

FL1 = "Flush 1"

FL2 = "Flush 2"

If a step is not activated the corresponding steps will be skipped.

Step no.:	2.2
Standby	---

In this program step you can program which outputs are activated during the step "Standby".

Step no.:	2.3
Pre flush	3<u>0</u>s

In this program step you can program the "pre flush" time between 1 and 999 seconds.

Step no.:	2.4
Pre flush	---

In this program step you can program which outputs are activated during the step "Pre flush".

Step no.:	2.5
Filtration	1<u>0</u>m

In this program step you can program the filtration time between 1 and 999 minutes.

Step no.:	2.6
Filtration	---

In this program step you can program which outputs are activated during the step "Filtration".

Step no.:	2.7
Flush 1	3<u>0</u>s

In this program step you can program "flush 1" time between 1 and 999 seconds.

Step no.:	2.8
Flush 1	---

In this program step you can program which outputs are activated during the step "Flush 1".

Step no.:	2.9
Back wash	1<u>5</u>s

In this program step you can program the time for step "Back wash" between 1 and 999 seconds.

Step no.:	2.10
Back wash	---

In this program step you can program which outputs are activated during the step "Back wash".

Step no.:	2.11
Flush 2	3<u>0</u>s

In this program step you can program the "flush 2" time between 1 and 999 seconds.

Step no.:	2.12
Flush 2	---

In this program step you can program which outputs are activated during the step "Flush 2".

3. Input functions

Step no.:	3.1
Delay LL	<u>1</u>s

In this program step you can program the delay for the low level switch of the raw water tank, between 1 and 999 seconds.

Step no.:	3.2
Delay HL	<u>1</u>s

In this program step you can program the delay for the high level switch of the clean water tank, between 1 and 999 seconds.

Step no.:	3.3
Delay OP	<u>1</u>s

In this program step you can program the delay for the overpressure switch between 1 and 999 seconds.

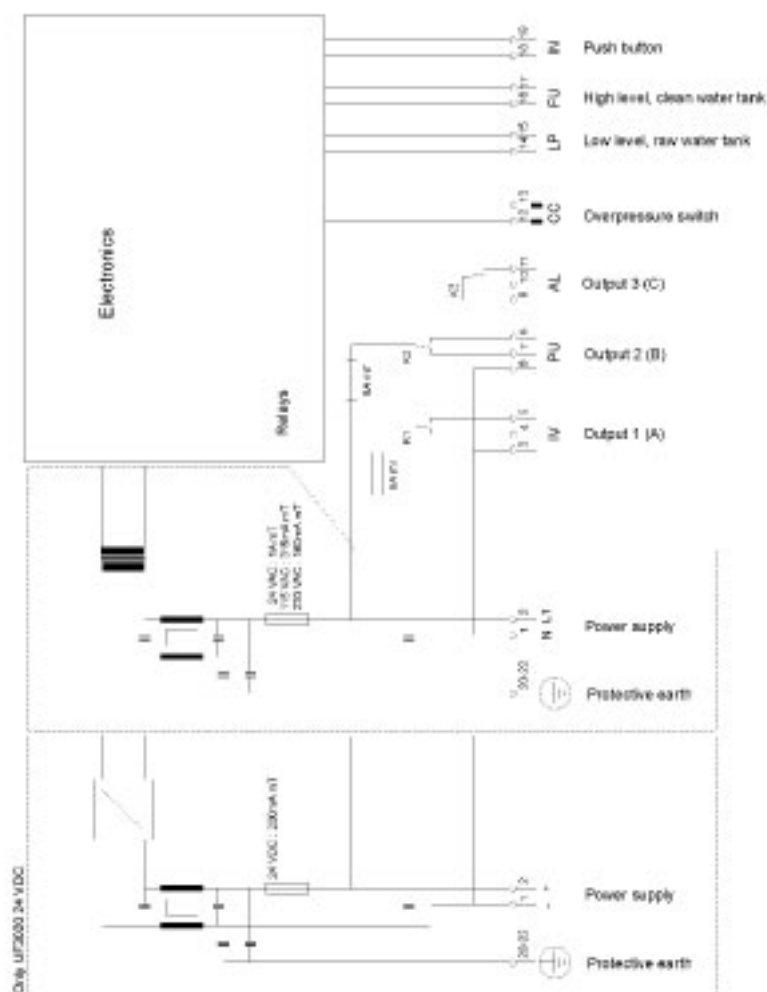
4. Power up mode

Step no.: 4.1
PFL STB FLU AL

In this program step you program how the installation has to start after powering up.

- PFL = Starting in step "Pre flush"
 If this step is not activated in step 2.1, the installation will start up with
 the step "Filtration".
- STB = Starting in step "Standby"
- FLU = Starting in step "Flush 1" (so total flush will be made)
 If step Flush 1 is not activated in step 2.1, the installation will start up
 with the step "Back wash".
- AL = Starting in step "Alarm" with message "Supply failure".

Connection terminals UF3020



Technical data

Mains connection :	230VAC, 50-60 Hz, 160 mA fuse 115VAC, 50-60 Hz, 315 mA fuse 24VAC, 50-60 Hz, 1A fuse 24VDC, , 200 mA fuse
Power consumption :	4 VA
Output 1 (IV) :	Voltage is equal to supply voltage, 8A fuse
Output 2 (PU) :	Voltage is equal to supply voltage, 8A fuse
Output 3 (AL) :	max. load 250V, 8A
Inputs :	loaded with 9V, 8mA
Protection class :	IP 65
Ambient temperature:	0 – 50 °C
Weight :	2 kg
Dimensions :	122 x 120 x 57 mm
Particulars :	Device protected against zero voltage