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# UF3020

Instruction manual for ultra filtration plants



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**Instruction manual**

Software version 1.01

# Contents

<b>General description</b> .....	1
"Standby" step	
"Filtration" step	
"Pre flush" step	
"Flush1" step	
"Backwash" step	
"Flush2" step	
"Alarm" step	
<b>Function display</b> .....	6
<b>Info display</b> .....	9
<b>Input functions</b> .....	11
Over pressure	
Low level raw water tank	
High level clean water tank	
<b>Output functions</b> .....	13
<b>Display and modifications of set points</b> .....	14
1. Language	
2. Process	
3. Input functions	
4. Power up mode	
<b>Wiring diagram</b> .....	20
<b>Technical data</b> .....	21
<b>Declaration of conformity</b> .....	22

## 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**

<b>Filtration</b>	
<b>Time</b>	<b>10m</b>

<b>Filtration</b>	
<b>Time</b>	<b>59s</b>

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**

<b>Pre flush</b>	
<b>Time</b>	<b>10s</b>

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

**Second LCD line for the "Flush 1" step**

<b>Flush 1</b>	
<b>Time</b>	<b>10s</b>

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

**Second LCD line for the "Backwash" step**

<b>Back wash</b>	
<b>Time</b>	<b>10s</b>

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

**Second LCD line for the "Flush 2" step**

<b>Flush 2</b>	
<b>Time</b>	<b>10s</b>

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

**Second LCD line for the "Alarm" step**

<b>Alarm</b>	
<b>Overpressure</b>	

<b>Alarm</b>	
<b>Supply failure</b>	

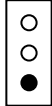
The second line indicates the cause of the alarm situation.

"Overpressure" : Overpressure situation during flushing or backwash.

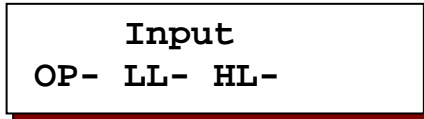
"Supply failure" : Controller switched on and step 4.1 programmed at "AL".

## 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



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



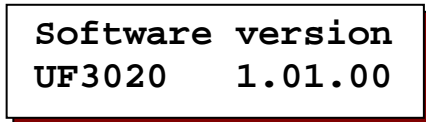
Here the current switch positions for the IV, PU and AL outputs are displayed.

A = IV

B = PU

C = AL

## Software version

A rectangular box with a white background and a dark red border. The text inside is in a monospaced font. The first line reads "Software version" and the second line reads "UF3020 1.01.00".

<b>Software version</b>
<b>UF3020 1.01.00</b>

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

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

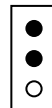
You can change these values at any time and they are not erased in case of a power failure.

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

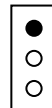
With the same key you can then browse through the programming.



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

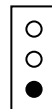


With the upper key you can move the cursor.



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 E  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 “.

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”.

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

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

<b>Step no.:</b>	<b>2.4</b>
<b>Pre flush</b>	<b>---</b>

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

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

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

<b>Step no.:</b>	<b>2.6</b>
<b>Filtration</b>	<b>---</b>

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

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

In this program step you can program the “flush 1” time between 1 and 999 seconds.

<b>Step no.:</b>	<b>2.8</b>
<b>Flush 1</b>	<b>---</b>

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

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

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

<b>Step no.:</b>	<b>2.10</b>
<b>Back wash</b>	<b>---</b>

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

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

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

<b>Step no.:</b>	<b>2.12</b>
<b>Flush 2</b>	<b>---</b>

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

### 3. Input functions

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

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

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

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

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

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

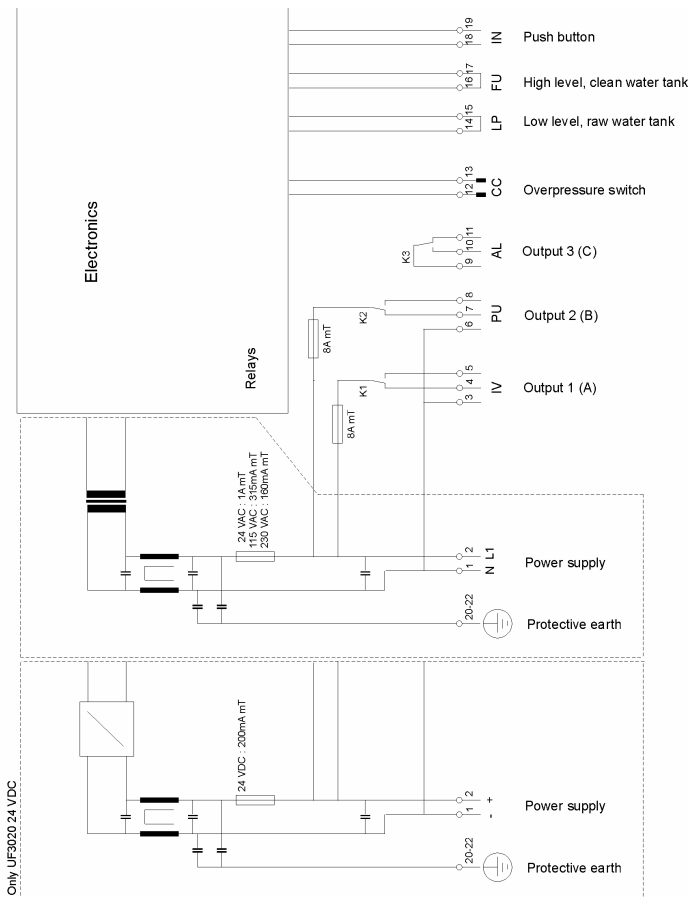
## 4. Power up mode

**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

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

## Declaration of conformity

Declaration of conformity of the product with the essential requirement of the EMC directive 89 / 336 / EEC.

### Product description

Product name : Controller for ultra filtration system  
Product type : UF3020  
Manufacturer : EWS Equipment for Water treatment Systems International B.V.

### Product environment

This product is intended for use in residential en light industrial environments.  
Emission standard : EN 50081-1  
Immunity standard : EN 50082-1

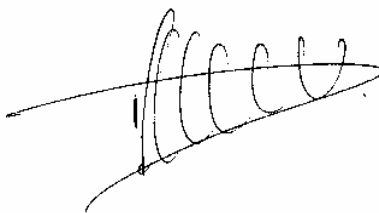
### Report

Report number : EWS / EMC0307

### This declaration was issued by :

Date : 09-07-2003  
Name : D.H. Naeber

Signature

A handwritten signature in black ink, consisting of a series of loops and a long horizontal stroke, positioned to the right of the 'Signature' label.





# **FIVE-YEAR CONTROLLER LIMITED WARRANTY**

## **LIMITED WARRANTY**

EWS International (hereafter EWS) warrants her products free from defects in material and workmanship under the following terms.

In this warranty, "Products" shall be taken to mean all devices that are supplied pursuant to the contract with exception of software.

## **VALIDITY OF THE WARRANTY**

Labour and parts are warranted for five years from the date of the first customer purchase. This warranty is only valid for the first purchase customer.

Notwithstanding the warranty period of five years as mentioned above - while upholding the remaining provisions – a warranty period of three months applies to the supply of software.

## **COVER OF THE WARRANTY**

Subject to the exceptions as laid down below, this warranty covers all defects in material or workmanship in the EWS products. The following are not covered by the warranty:

- 1) Any product or part not manufactured nor distributed by EWS. EWS will pass on warranty given by the actual manufacturer of products or parts that EWS uses in the product.
- 2) Any product, on which the serial number has been defaced, modified or removed.
- 3) Damage, deterioration or malfunction resulting from:
  - a) Accident, misuse, neglect, fire, water, lightning or other acts of nature.
  - b) Product modification or failure to follow instructions supplied by the products.
  - c) Repair or attempted repair by anyone not authorized by EWS.
  - d) Any shipment of the product (claims must be presented to the carrier)
  - e) Removal or installation of the product
  - f) Any other cause, which does not relate to a product defect.
  - g) Cartons, equipment enclosures, cables or accessories uses in conjunction with the product.



## **FINANCIAL CONSEQUENTES**

EWS will only pay for labour and material expenses for covered items, proceed from repairs and updates done by EWS at the EWS location. EWS will not pay for the following:

- 1) Removal or installations charges at customers and/or end user location.
- 2) Costs for initial technical adjustments (set-up), including adjustment of user controls or programming.
- 3) Shipping charges proceed from returning goods by the customer. (Shipping charges for returning goods to the customer are for the account of EWS).

All the costs which exceed the obligations of EWS under this Warranty, such as, but not limited to, travel and accommodation costs and costs for assembly and dismantling are for the account and risk of the customer.

## **WARRANTY SERVICE**

In order to retain the right to have a defect remedied under this warranty, the customer is obliged to:

- 1) Submit complaints about immediately obvious errors related to the products delivered, in writing within eight days of the delivery of the products and submit complaints about shortcomings relating to the products delivered, which are not visible, within eight days of their being discovered.
- 2) Return defected products for account and risk of the customer. Costs for this shipment will not be reimbursed by EWS. The products may only be returned following express, written permission from EWS. Returning the products does not affect the obligation to pay the invoiced amounts.
- 3) Present the original dated invoice (or a copy) as proof of warranty coverage, which must be included in any [of the] return shipment of the product. Please include also in any mailing a contact name, company, address and a description of the problem(s).



## **LIMITATION OF IMPLIED WARRANTIES**

Except where such disclaimers and exclusions are specifically prohibited by applicable law, the foregoing sets forth the only warranty applicable to the product, and such warranty is given expressly and in lieu of all other warranties, express or implied, or merchantability and fitness for a particular purpose and all such implied warranties which exceed or differ from the warranty set forth herein are hereby disclaimed by EWS.

## **EXCLUSION OF DAMAGES**

EWS' liability for any defective products is limited to the repair or replacement of the product at our option. Except where such limitations and exclusions are specifically prohibited by applicable law EWS shall not be liable for:

- 1) Damage to other property caused by defects in the EWS product, damages based upon inconvenience, loss of use of the product, loss of time, commercial loss or:
- 2) Any damages, whether incidental, [consequential or otherwise] special, indirect or consequential damages, injury to persons or property, or any other loss.

Under no circumstances whatsoever shall EWS be obliged to provide compensation beyond the direct damage incurred by customer up to an amount not exceeding the payment receivable from the insurer of EWS in connection with the damage.

## **APPLICABLE LAW AND DISPUTES**

- 1) Dutch law shall govern all offers made by EWS and all agreements concluded between EWS and customer. This warranty explicitly excludes application of the Vienna Sales Convention (CISG).
- 2) All disputes which may arise between the parties shall be dealt with exclusively by the competent court of law in the Netherlands under whose jurisdiction EWS falls. However, EWS reserves the right to submit any disputes to the competent court in the customer's location.