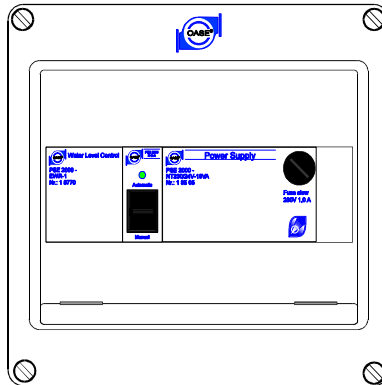


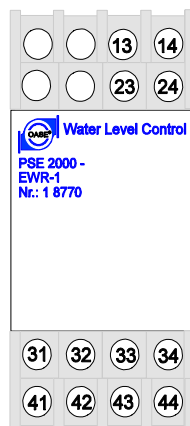
Manual

Electronic water level control EWR-1K



Art.- No.: 870-525 Id.-No.: 51554

Electronic water level control EWR-1



Art.- No.: 853-705 Id.-No.: 53908



Dokument: \EWR1_e01.doc
Druckdatum: 11.09.06
Bearbeitet von: F.-J.P.. am 27.03.2001



OASE FT
GmbH
Tecklenburger Straße 161
D - 48477 Hörstel
☎ 05454/80-0
📠 05454/80322

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1 Safety Precautions:

The EWR-1 unit is set up according to protection class 2 and can switch a maximum voltage of 230 Volts AC mains.

The VDE regulations are applicable, particularly DIN VDE 0100, for fountain installations part 738 and DIN EN 60335-1.

Even when the unit is switched off, there may be current flowing from the connection clips at the side of the unit.

The unit is not to be operated by children.

In commercial use observe the safety precautions for the prevention of accidents of the employer's liability association for electrical installations.

When opening the cover, or when parts, other than those normally removable, are removed, live circuits and connectors may be exposed. When the unit has to be opened, due to adjustment, maintenance, repair or part replacement, it must be disconnected from all power sources. When maintenance or repairs need to be carried out with the power connected, this must only be done by a QUALIFIED SPECIALIST acquainted with the necessary safety standards, precautions and potential hazards.

Only use tools which are specially approved for working with live current!

The unit must never be immediately switched on after being transported from cold to warm environments. Under unfavourable conditions the resulting water condensation may destroy your unit. Wait until the disconnected unit has reached room temperature.

While operating the unit, ensure adequate ventilation. The unit must be mounted on a 35 mm rail, so that the air can flow freely over the housing. The unit is mainly cooled by convection (movement of heat in air).

If for any reason the unit can not be operated without potential danger, it must be fully disabled and secured from unintentional use.

This applies

- when the unit is visibly damaged
- when the unit no longer functions
- after long storage under unfavourable conditions
- after unfavourable transport conditions

The unit must only be operated in dry, closed rooms or be encased in a housing with the corresponding protection.

The unit must only be operated with an ambient temperature of between 0 and 50 °C.

1.1 Attention! Must be read!



Read this manual carefully, because the guarantee does not cover any damage caused by neglect of instructions given in this manual. We take no responsibility for any consequent damage.

The safety precautions, which when not followed may endanger the machine, are signified by the word **Attention!**

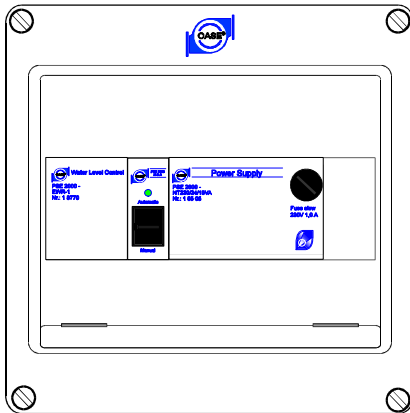
1.2 Training and qualifications of personnel

The personnel responsible for operating, service, inspection and mounting must all have the relevant qualification for this work. Shared domains of responsibility, competence and supervision of personnel must be organised in detail by the operator. Should the personnel not have the necessary knowledge they must be trained and instructed. This can be undertaken by the manufacturer/supplier, if requested. Furthermore the operator must ensure that the entire manual is fully understood by the relevant personnel.

2 Description:

2.1 Regulations of use and application

2.1.1 Water level control EWR-1K is mounted in a splash proof housing.



The electronic water level control EWR-1K for fountain installations, swimming pools, ponds and basins ensures a constant water level within pre-set parameters. The water level is set by the positioning of three submersible electrodes (common, minimum and maximum) in the basin.

The electrodes can operate singly (as a hanging electrode) or be grouped to a sensor (e.g. OASE type WSS20 or WSS 950). These are advantageous because strong wave movements can be mechanically smoothed and hence precise adjustment for the smallest level differences becomes possible.

Refilling with fresh water is carried out by a 24V DC solenoid valve (alt. 230V 50 Hz) from the water mains or by a pump from a borehole or cistern. Installations mounted in the controlled basin can at the same time be protected from dry running by switching off.



The dry running protection, with resultant switching off, operates during each refilling.

The water level control EWR-1K also serves to pump out basins and to keep cellars and technical rooms etc. dry.

3 Conditions for connection

3.1 Installation and Connection generally

The control unit should be flood protected by mounting in a dry, well ventilated room in close proximity to the basin. The maximum room temperature should not exceed 30 °C .

The control unit should be fixed to the wall in such a way, that the operator has easy access and can work without any danger. The housing is fixed to the wall by means of four screws and plugs.

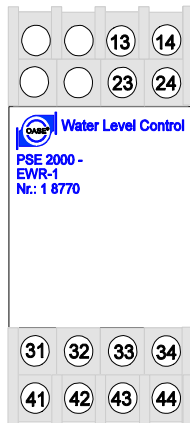


The electrical connection may only be carried out by a qualified electrician and in accordance with the local EVU regulations, as well as valid national and international regulations.

All information regarding supply voltage, rated current, rated power etc. is to be found on the type plate.

3.2 Connecting the single modules

3.2.1 Water level control EWR-1 module for the Installation box (mounting on the switch board)



Klemme Terminal	Funktion Function
13 / 23	Common(Earth)
14	Minimum
24	Maximum
31 / 41	Mains = 230V 50 Hz
32 / 42	Voltage = 0V AC
33 / 43	Root / P
34	Make / NO
44	Break / NC
Relay	250V / 8A, 1W
Art.- No.:	8
Id.- No.:	53

The automatic water level control EWR-1 is incorporated in the EWR-1K.

As a single module it was designed to be part of the main control unit.

It is suitable for mounting on an encased carrying rail (NS 35), and with a cover measurement of 45 mm by 2 TE is also suitable for installing in an installation box.

3.2.2 Sensor connection

The level heights are recorded by three electrodes.

1. Common (Earth) 13 / 23
2. Lowest level (Minimum) 14
3. Highest level (Maximum) 24



The sensor cable must not exceed a maximum length of 50 m!
The functioning to a great extent depends upon the conductivity of the water, upon the surface and upon the distance between the electrodes.

3.2.3 Connection of the mains supply to the EWR-1

The mains supply of 230V 50/60Hz is connected directly to the terminals 31/41 and 32/42.

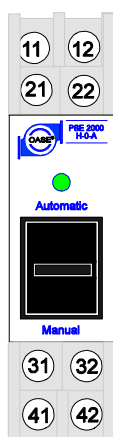
3.2.4 Connections of the switching contact in the EWR-1

The switch contact of the EWR-1 is a potential free changer and is assigned to the terminals 33/43, 34 u. 44. The EWR-1K is pre-wired in such a way that a solenoid valve (24V DC with max. 11 Watt) can be connected directly to the NT230/24-18VA mains adapter. A 230V AC solenoid valve, or a feed pump (up to a max. 550 W, 230V) can be run from the terminals 44 and 32/42 of the EWR-1.

A small fountain pump (max. 550 W, 230V) can be directly connected to the terminals 34 and 32/42 of the EWR-1 and be protected from dry running.

Also relay switches controlling larger pumps or entire installations can be connected to the 230V output.

3.2.5 Function selector switch

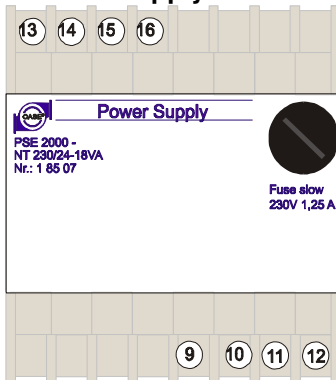


Klemme Terminal	Funktion Function
11/21	Root
14	Manual
24	Automatic
31	LED green
41	LED red
32/42	N
U =	24V DC-230V AC
I =	max. 6 A
Art.-No.:	8
Id.- No.:	53

The function selector switch has three possible positions. The position **Automatic** and **0** remain as such when chosen, but the **Manual** position returns to the **0** afterwards.

The operating mode is indicated by a red or green light, according to the connection.

3.2.6 Supply of the solenoid valves with low tension 24V DC



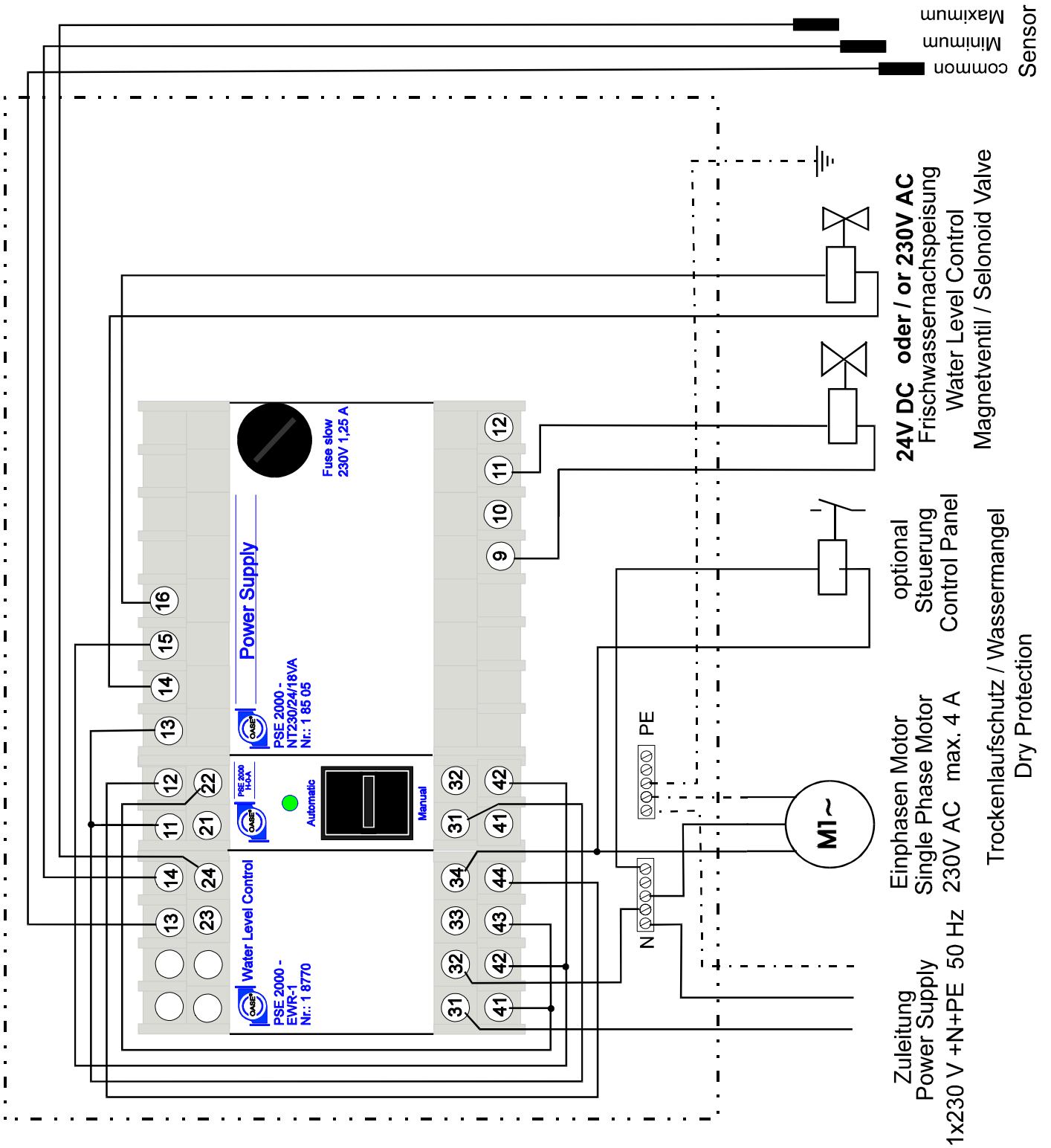
Clip Terminal	Funktion Function
13 / 14	L 230V 50Hz
15 / 16	N 0V AC
9 / 10	L+ 24V DC
11 / 12	L - 0V DC
P	15 W
Art.-No.:	18507
Id.- No.:	

For supplying the 24V DC solenoid valves the mains adapter NT230/24/18 is incorporated into the water level control EWR-1K. The 24V DC solenoid valve can be directly connected to clip 9/10 u. 11/12.



**For all electrical connections make sure that the protective conductor (green-yellow artery) is connected in the correct way.
The previously mentioned safety precautions must also be strictly followed.**

3.3 Wiring diagram with a plan of the possible connections



4 Starting up

4.1 Description of the function of indicators and operational components

4.1.1 Green light emitting diode (LED) in the M - 0 - A switch

When the solenoid valve is on, this is indicated by a green light emitting diode (LED) in the H-0-A switch.

4.1.2 Green light emitting diode (LED) in the Mains adapter

When the solenoid valve is on, this is indicated by a green light emitting diode (LED) in the H-0-A switch.

Attention! If the LED does not light in the Mains adapter, even though the LED in the M - 0 - A switch is

lit the fuse in the Mains adapter is faulty.

4.2 Hand-0-Auto switch

The incorporated Manual 0 Automatic switch allows, for maintenance purposes, for the switching off of the solenoid valve, or for switching on with the key.

The function „water shortage“ is not influenced.



In normal running the M-0-A switch has to be set to „Auto“.

4.2.1 Switch position Manual

As long as the key is held down, the fresh water refill remains on and the solenoid valve open.



Attention! **The function „water shortage“ remains dependant upon the water level as recorded by the electrodes.**

Attention! **The water refill is not switched off automatically.**

4.2.2 Switch position off (middle position)

The solenoid valve is switched off, even though the need for fresh water may be indicated by the sensor.



Attention! **The function „water shortage“ remains dependant upon the water level as recorded by the electrodes.**

4.2.3 Switch position Automatic

The control operates in automatic mode. The water level is recorded by the electrodes .

When the basin is empty, the solenoid valve is opened and the basin filled.

When the **Minimum**- electrode is reached, there is no change in function.

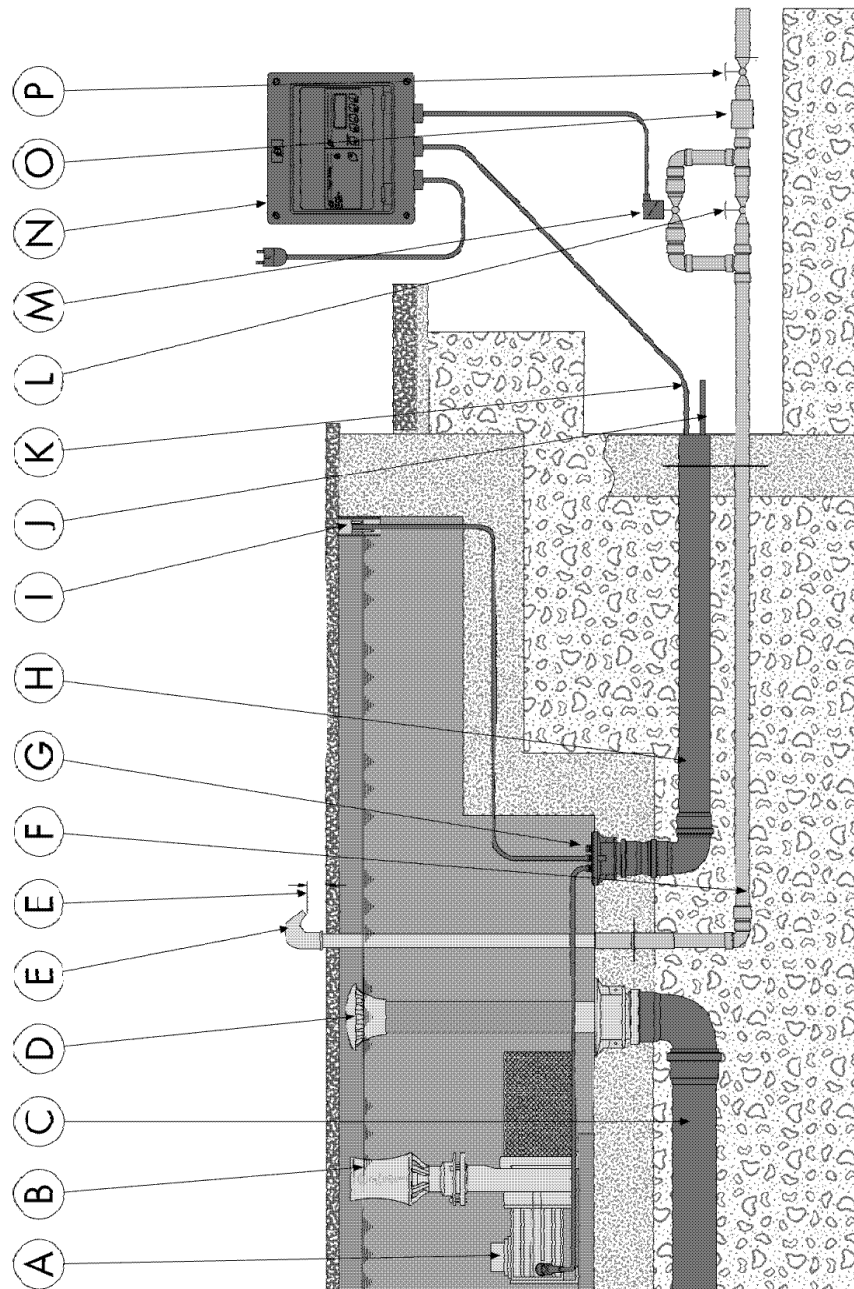
When the **Maximum**- electrode is reached, the solenoid valve is switched off and the unit is switched on.

When the level sinks below the **Minimum**- electrode again (due to evaporation, spraying or leakage), the installation is switched off because of lack of water and refilling occurs until the water level has again reached the maximum- electrode.

5 General diagram for water level control

Key

A	=	pump	B	=	fountain nozzle
C	=	overflow drain pipe	D	=	overflow outlet
E	=	freshwater inlet fitting (at least 50 mm above basin rim)	F	=	freshwater inlet
G	=	cable outlet fitting	H	=	cable protection pipe
I	=	water level sensor	J	=	power supply for pump
K	=	Sensor - Leitung	L	=	gate valve
M	=	solenoid valve	N	=	automatic water level control
O	=	filter screen	P	=	gate valve with drain



6 Fault finding chart

6.1 Fault finding for refill function

No.	Fault	Possible cause	Remedy
1	Solenoid valve does not open	<p>No power supply</p> <p>Solenoid valve is defect</p> <p>Sensor cable not properly connected or there is a break in the cable</p> <p>Electrodes are dirty or touching</p> <p>Hand 0 automatic switch is set to 0 (out)</p> <p>Safety fuse in mains adapter has blown</p>	<p>Check power supply</p> <p>Change solenoid valve</p> <p>Check sensor cable</p> <p>Clean the sensor</p> <p>Set switch to auto</p> <p>Change fuse</p>
2	Solenoid valve does not switch off	Valve stuck due to soiling	Clean valve
2.1	Solenoid valve does not switch off in automatic mode	<p>The conductivity of the water is not great enough, the electrode gap is too large, or the electrode surface is too small</p> <p>The electrodes are soiled with a greasy substance or corrosion</p> <p>Water level does not reach the maximum electrode in WSS 20</p>	<p>Increase electrode surface</p> <p>Exchange regulator with a more sensitive one</p> <p>Clean electrodes</p> <p>Clean the air-exchange hole</p>
3	Solenoid valve switches on and off too quickly without the other level having been reached (Takten)	<p>Sensor cable not properly connected or there is a break in the cable</p> <p>The electrodes are soiled with a greasy substance or corrosion</p>	<p>Check sensor cable</p> <p>Clean electrodes</p>
	Please inform us of any further faults		

6.2 Fault finding chart for the water shortage function

No.	Fault	possible cause	remedy
1	<p style="text-align: center;">Attention</p> <p style="text-align: center;">Pump running without water</p>	<p>No power supply to the unit</p> <p>Sensor cable not properly connected or there is a break in the cable</p>	<p>Check power supply and fuse in mains adapter</p> <p>Check sensor cable</p>
2	Pump can not be switched on in automatic mode	<p>The conductivity of the water is not great enough, the electrode gap is too large, or the electrode surface is too small</p> <p>The electrodes are soiled with a greasy substance or corrosion</p> <p>Water level does not reach the maximum electrode in WSS 20, the electrodes are soiled with a greasy substance or corrosion</p>	<p>Increase electrode surface</p> <p>Exchange regulator with a more sensitive one</p> <p>Clean electrodes</p> <p>Clean the air-exchange hole</p>
3	Pump switches on and off too quickly without the other level having been reached (Takten)	<p>Sensor cable not properly connected or there is a break in the cable</p> <p>The electrodes are soiled with a greasy substance or corrosion, the electrodes are soiled with a greasy substance or corrosion</p>	<p>Check sensor cable</p> <p>Clean the electrodes</p>

Attention! It is not possible to operate more than one unit EWR-1 in a basin at the same time, since the electrical effect between the electrodes causes uncontrolled switching!