

## REDOX Potential Measuring and Regulating Unit



## **Introduction**

Congratulations! With your Sander REDOX controlling unit, you will be satisfied, because you can now benefit from many years of technical aquarium experience that the Sander Company has in producing guaranteed quality devices for successful fish-tank engineering.

Before using the device, please make sure you have read the general safety instructions. Please read the instructions for use attentively and keep the instructions nearby in case you have any questions. Should the Quality Device be given to a third, be sure to give on also the instructions for use with the item. Please use the device only in the described manner for the specified ranges.

## **Appropriate use of Sander REDOX Controller**

The Redox potential measuring and regulating unit is characterized for use only with corresponding ozone generators of our product line items Certizon, S, and XT. The device was synchronized specifically for use with the mentioned products and may only be operated as represented in the following instructions according to the corresponding combination.

Please notice that other uses or modifications of the device are regarded as not appropriate and can involve the danger of injury and/or harm of the device. For any damage resulting from adverse device use, the manufacturer has no liability. This quality device is not determined for industrial usage.

This device is not meant to be used by disabled persons with insufficient bodily, sensory or mental abilities or that lack experience (including children) and/or knowledge to use it, unless they are supervised by a person responsible for their safety or have attained subsequent instructions from that person, how the device is to be used.

## REDOX controlling unit using guide

- 1 Display of REDOX mV
- 2/3 Push-button / LED
- 4 Adjustment of set point Potentiometer
- 5 Socket power adapter
- 6 BNC connector for REDOX electrode



- 7 REDOX electrode with cable
- 8 Connecting cable to Ozonizer
- 9 Bracket for REDOX electrode
- 10 Screw Driver
- 11 Cleaning Brush
- 12 Bottle



### Technical Data

Range of usage:	0 bis 1000 mV
Power supply:	12 VDC
Current consumption:	100 mA
max. Switching capacity:	12 VDC / 4A

### Contents of delivery

Before starting the unit, check whether the following delivery contents are complete and undamaged:

1 x Redox potential measuring and regulating unit, 1 x REDOX electrode with cable, 1 x Connecting cable for Ozonizer, 1 x Bracket for REDOX electrode, 1 x Screw Driver, 1 x Cleaning Brush, 1 x Bottle for cleaning fluid and 1 x REDOX controlling unit Instruction booklet.



### **Information about possible dangers:**

The REDOX potential measuring and regulating unit is used on the owner's risk.

Children from the age of 8 years as well as disabled or handicapped persons or persons with no or small technical experience may use the REDOX potential measuring and regulating unit when under surveillance or after having received a thorough tuition about the use and safety measures.

Children may not play with the REDOX potential measuring and regulating unit. Children may do the cleaning and servicing of the unit only under surveillance.

Please do not dismantle the unit under any circumstances. By inappropriate repairs, considerable dangers can result for the owner. If needed, contact the manufacturer or an authorized technician for repairs.

If the REDOX potential measuring and regulating unit is damaged, please do not operate it without having it checked. Damaged Devices may be an unnecessary and considerable danger to the owner.

### **Warranty and liability information**



The REDOX potential measuring and regulating unit has a 24-month guarantee. Within the guarantee, all parts effected by material defects or improper assembly will be replaced with no further cost.

The device may not be held under water or come in contact with water.

#### **The following are not covered by warranty:**

Any damage done to the unit by misuse (differing from the REDOX controlling unit using guide instructions) or failure following the instructions supplied.

Any damage done to the unit by unauthorized repair, disassembly, improper cleaning or opening the device.

Any damage done to the unit by an accident, improper transportation, dropping or hitting the device after the date it was bought.

The guarantee and liability of Erwin Sander Elektroapparatebau GmbH Company covers only the delivered device or REDOX controlling unit.

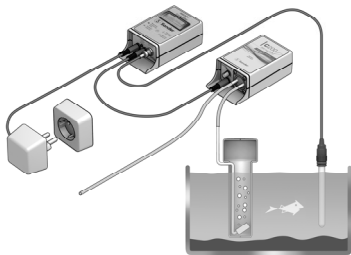
## Setting up and attaching the REDOX measuring and regulating unit

Setting the unit up:

The device can be placed flat on a stable surface or hung on a vertical wall.

Attaching the unit:

Scheme showing use of Sander ozone generators in product line items Certizon.  
The ozone generators of the series S and XT are connected analogue to the Certizon.



A Sander ozone generator of the product series Certizon or S should be connected using the delivered connecting cable for REDOX (8). The REDOX measuring and regulating unit are delivered with a special power adaptor.

Notice: The Sander ozone generator Ozonizer XT must be connected to the REDOX measuring and regulating unit using the connecting cable delivered with it.

## Switching the REDOX controller on

The REDOX controller has two functions. The REDOX potential unit measures the redox potential of the water with an electrode and has a digital display to show the redox value (mV). Furthermore, the controller can switch a connected ozone generator on/off. Depending on the adjusted set-point of the REDOX potential unit, if the measured redox potential is higher than the adjusted set-point, the ozone generator is switched off.

If the measured value is lower than the adjusted set-point, the controller will turn the ozone generator on.

The potentiometer (4) is used for adjusting the required set-point. When the switch for measured amount/set point amount (2) is held pressed; the set point is shown in the display. The required amount can be adjusted (4) on the potentiometer by using the screwdriver (10). When letting go the switch, the current measured amount appears in the display again.

The light-emitting diode (3) shows whether the power tension is turned on for accessing the ozone generator. If the REDOX potential amount is higher than the required rate, the light-emitting diode and the power tension are switched off automatically. If the REDOX potential amount is lower than the required rate, the light-emitting diode and the power tension are automatically switched on.

## Usage, cleaning and maintenance of the REDOX potential electrode

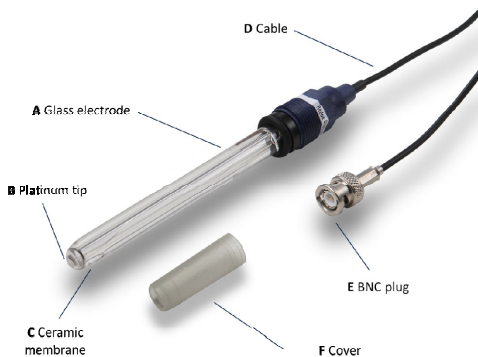
When in everyday use, the cover (F) on the electrode foot must be taken off. Make sure that the platinum tip (B) and the ceramic membrane (C) are under water with a constant water flow to ensure a good measurement, and to avoid deposits. The measured amount stabilizes after approx. 15 to 30 minutes. If the measuring electrode is not under water, the cover (F) must be put on. The electrode shouldn't dry out. The electrode tip and ceramic membrane should not be touched by bare fingers to avoid the electrode from getting greasy.

After a while, a thin layer of fouling will grow and settle at the platinum tip (B) and ceramic membrane (C). This type of fouling may hinder the correct measuring of the REDOX potential. If the REDOX potential value shows unrealistic values, then the metal plate must be cleaned with the brush (11). To remove the fouling layer from the electrode, the cleaning brush (11) should be used carefully without pressing it down and if possible, brushing only in one direction two or three times, to prevent scratching the platinum tip.

Notice: if there is a lot of fouling on the platinum tip or if the electrode (A) shows unrealistic values after using the cleaning brush (11), make use of a cleaning fluid. Due to safety regulations, we are not able to send a cleaning fluid with this package. We recommend a commercially available 30% citric acid available in a common drugstore. Please proceed as follows: Take the bottle (12) delivered along with the package and fill it one third with the citric acid. Fill up the rest with tap water. Screw the BNC-plug (E) electrode off the measuring unit and dip it into the cleaning fluid for three minutes, stirring the foot around a bit. Then simply rinse the electrode off with tap water and keep it in water for approx. one hour.

Please note the safety instructions of the supplier of the citric acid.

### Diagram of the REDOX Electrode



In order to obtain reliable measuring values, the maintenance as describe above should be done accordingly and the REDOX Electrode itself may be exchanged yearly.

## Disposal



The wrapping consists of non-polluting materials which you can dispose of at any local recycling collection places.



Possibilities for disposing the used product can be asked about at your municipal administration. In interest of general environmental protection, do not dispose of the device in domestic garbage, but provide for an appropriate way of disposal. You can be informed about garbage collecting places and opening hours at your public administration.

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