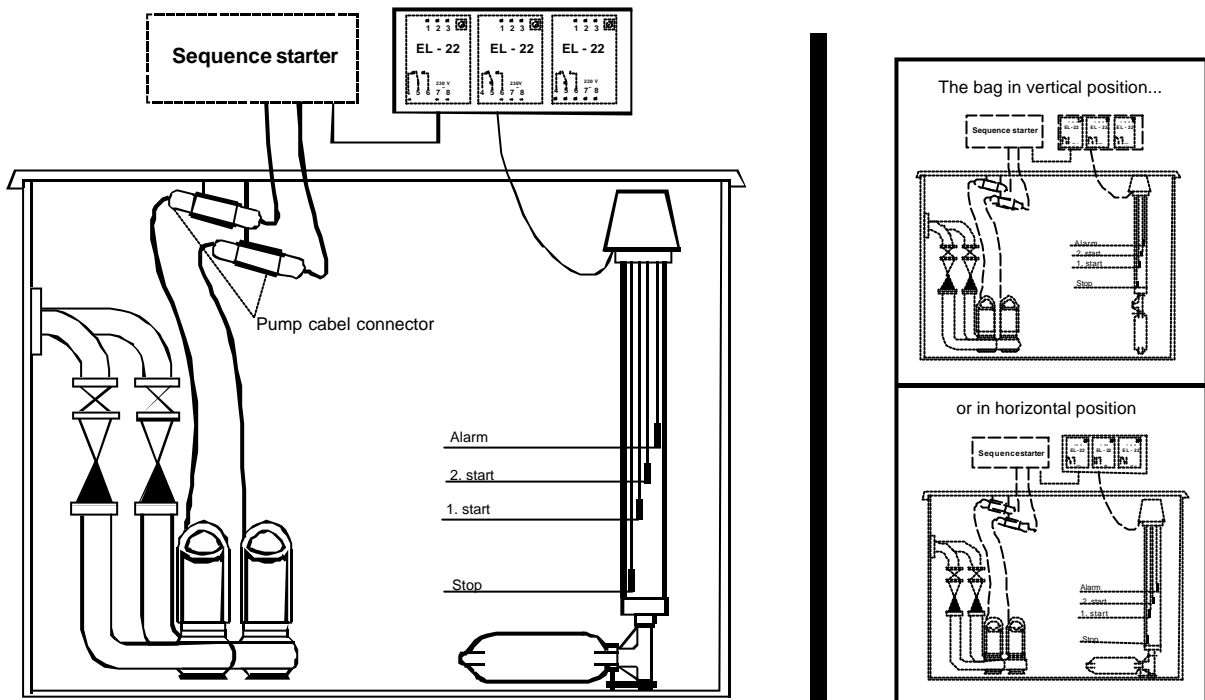


# KARI

# ELP

## ELECTRODE SWITCH FOR WASTE WATERS



### DESIGNED FOR SEWAGE PUMPING PLANTS

ELP- system is extremely reliable because the sensing electrodes are completely separate from the sewage. The height of the sewage level is carried to the height of the auxiliary liquids level.

### PRINCIPLE OF FUNCTION

If the liquid level to be regulated is under the bag the auxiliary liquid in the pipe is at 0-level. When the level outside the pipe rises, hydrostatic pressure pushes the bag which raises the liquid level in the pipe. So both levels stay at the same height. The wanted levels are chosen by adjusting the height of the electrodes in the pipe.

### EASY TO INTRODUCT AND ADJUST

For each operating level there are separate electrodes which are attached to the connection box with coloured wires. The electrode of the adjustable operating level is raised to the desired level and the cable is locked to the connection box.

### RELIABLE

ELP-system consists of several similar units which causes that possible breaking of one unit doesn't stop the functioning of the pumping plant.



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## FILLING THE BAG

The bag is delivered ready filled. Bags volume is about 1,9 litres. In order to prevent sliming and to achieve proper function it is important to use DISTILLED water with about 30% of ANTIFREEZE LIQUID in it.

## WARNING!

If other than mentioned liquids are used it may cause operational hazards. It is important that there is no air in the bag and that there is not TOO MUCH liquid. The electrode switch can't stop the pump if the stopping electrode is under the surface of the liquid.

## ASSEMBLING

When assembling the ELP-system the bag and the pipe are joined (the bag has a R1'' adapter with a female screw). **The pipe must be cleaned thoroughly before attaching it to the bag.** In case there are impurities (grease or the like) inside the pipe it may cause faults in operation. The metallic pipe operates as the systems common electrode. When pressing the connection box to the end of the pipe the wires attached to the connection box's body connect the pipe to the electrode circuit. Make sure that there is a connection between the pipe and the connection strip number 3 of the EL-22.

## THE SETTING OF THE OPERATING LEVELS

For each operating level there is a specific electrode and a coloured wire which is connected to the cable in the connection box. Operating level is set by raising the electrode in question from its wire to hang in the appropriate height in the pipe. As soon as the electrode is at the correct height, its wire is locked to the connection box's clip.

## INTRODUCTION

The sensitivity of the EL-22 electrode switches belonging to the ELP-system is pre-adjusted during the factory tests. In case the sensitivity after all isn't sufficient (the relays don't pick up although the surface of the liquid is above the electrodes) the sensitivity of the electrode switches must be increased. To get sensitivity adjustments done, all electrodes must be under auxiliary liquids surface. The surface can be raised by pressing the bag or by letting the liquid to be regulated rise high enough when the bag and pipe are in the well. One by one the sensitivity of the switches is increased until the relay picks up. It is important that the relay is not adjusted too sensitive for it may cause operational hazards due to leakage currents.

## THE SENSITIVITY ADJUSTMENT

At the upper right corner in each electrode switch EL-22 there is a potentiometer which has a marked adjustment score. When rotated clockwise to the utmost the sensitivity is at maximum (when the mark is pointing 10).

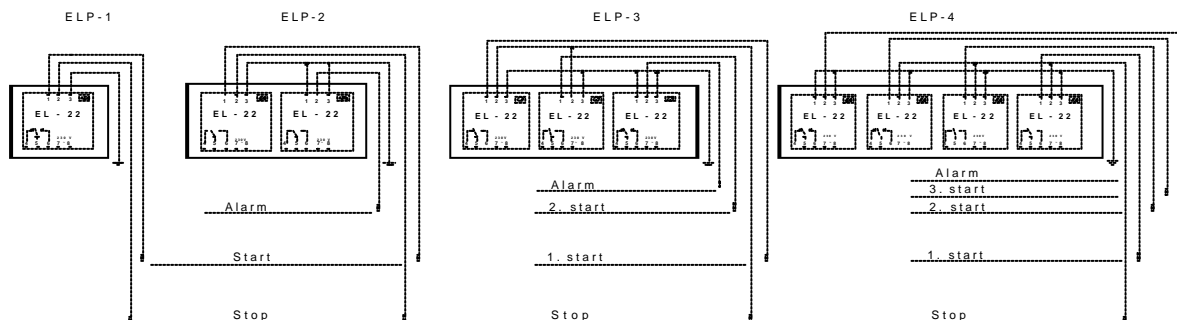
## TECHNICAL DATA

See the EL-22 brochure.

## THE PARTS OF DELIVERY

- \* electrode switches EL-22 in a common EK- or MINI- case
- \* the electrodes with their wires (5 m) and a connection cable (length 5 meters)
- \* ready filled auxiliary liquid bag
- \* a connection box to be attached to the end of the pipe which locks the wires of the electrodes in their places and enables the air conditioning in the pipe

## CIRCUIT DIAGRAMS



ELP-1  
one pump  
control or  
dry running  
prevention.

ELP-2 high level  
alarm and dry  
running prevention  
or emptying pump  
controlling.

ELP-3 controlling two pumps.  
Starts at different levels,  
mutual stop.  
Also high level alarm.

ELP-4 controlling three pumps.  
Starts at different levels, mutual  
stop. Also high level alarm.