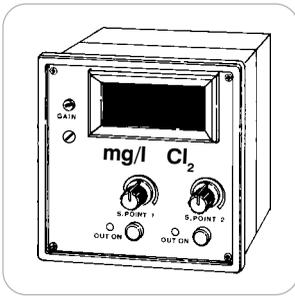




This manual contains important safety information about installation and use of this equipment. Ignoring this information could result in injuries or damages.



It is strictly forbidden to use this equipment with radioactive chemicals !



“JCL1” CONTROLLER OPERATING MANUAL

Read carefully!



ENGLISH Version

R1-04-04



“JCL/1” series instruments comply with the following European regulations:

EN60335-1 : 1995, EN55014, EN50081-1/2, EN50082-1/2, EN6055-2, EN60555,3

Based on directive CEE 73/23 c 93/68 (DBT Low voltage directive) and directive 89/336/CEE (EMC Electromagnetic Compatibility)



GENERAL SAFETY GUIDELINES

Danger!

In emergencies the instrument should be switched off immediately! Disconnect the power cable from the power supply!

When using instrument with aggressive chemicals observe the regulations concerning the transport and storage of aggressive fluids!

When installing outside European Community, always observe national regulations!

Manufacturer is not liable for any unauthorized use or misuse of this product that can cause injury or damage to persons or materials!

Caution!

Instrument must be accessible at all times for both operating and servicing. Access must not be obstructed in any way!

Feeder should be interlocked with a no-flow protection device.

Instrument and accessories must be serviced and repaired by qualified and authorised personnel only!

Always read chemical safety datasheet!

Always wear protective clothing when handling hazardous or unknown chemicals!

Introduction	page 4
Electrical Wiring JCL/1	page 4
Installing the JCL/1 ECL1	page 5
Calibration amperometric cell ECL1	page 5
HCIO Dissociation Curve	page 6
Set point adjustment	page 6
StandBy	page 7
ECL1 probe cleaning	page 7
Current Output	page 7
Accessories	page 8
Technical Controller Features	page 8
Installation Drawing	page 9

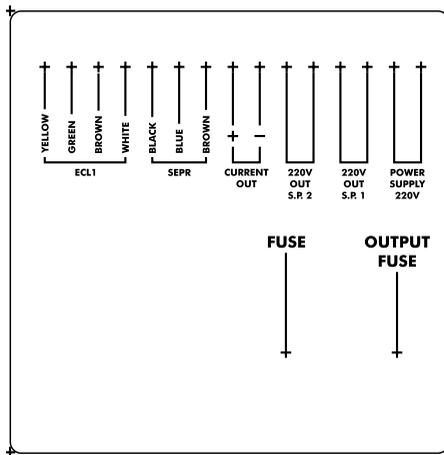
INTRODUCTION

JCL/1 controller enable to measure and adjust the amount of free chlorine in the water showing the value directly in mg/l of Cl_2 . The controller determines the concentration of Cl_2 by reading the Hypochlorous acid coming from the dissociation of inorganic chlorine in water (Ex.: Sodium Hypochlorite). JCL/1 provides two ON/OFF set-points and a $0\div 20$ mA output current signal proportional to the display reading to connect a chart recorder. Measured value is showed on a high efficiency red 7 segment display for an easy reading.

The controller is housed in a ABS plastic case IP40 and it is designed for panel installation. All the electrical connections and probe plug have been placed in the rear panel. Max overall dimensions are 96x96x150 mm.

ELECTRICAL WIRING JCL/1

Electrical connections are made by using the green terminal block in the rear of the controller as showed in the figure:



“**ECL1 Probe**”* probe models ECL1/ECL2/ECL3

“**SEPR**”* (Brown, Blue, Black) proximity probe

“**Current Out**”* $0\div 20$ mA proportional current output to the controller reading (different ranges available upon request)

“**230 Out S.P.2**” 230Vac (Max 5A resistive load) output SetPoint 2

“**230 Out S.P.1**” 230Vac (Max 5A resistive load) output SetPoint 1

“**Power Supply 230V**” Power Supply

“**FUSE**” Controller Protection Fuse (200mA T 5x20)

“**OUTPUT FUSE**” Set-Points “S.P.1” and “S.P.2” Output Protection Fuse (1AT 5x20 standard, Max 3.15A T 5x20)

* Pay attention to the wires polarity

INSTALLING THE JCL/1 - ECL1

- Install the instrument on the panel.
- Fix the probeholder PEF on a wall or on a vertical support, making sure that the probeholder is installed perpendicularly.
- Connect the inlet of the probeholder to the plant (install a 80 micron filter before the probeholder). Connect the top outlet of the PEF to drain using the installation kit. In case the pressure in the plant shouldn't be sufficient for the water circulation, make the length of the hoses shorter.
- Screw on the proximity switch SEPR to the PEF left hand side and connect the wires as showed at pag. 4.



To ensure a correct working of the instrument, we recommend the use of probeholder type PEF

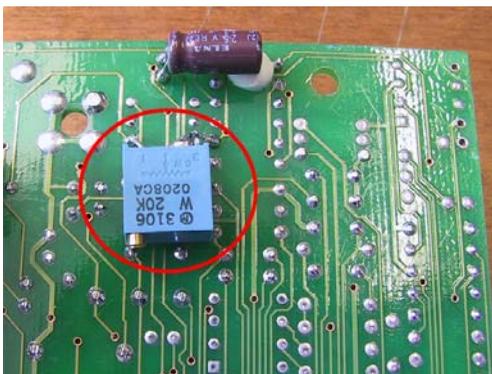
CALIBRATION AMPEROMETRIC CELL ECL1

Once the instrument has been correctly installed, proceed to calibrate the cell as follows:

- wash the membrane and the cell first with water and then with electrolyte.
- fill the membrane with the electrolyte and riassemble the amperometric cell avoiding contact with metallic parts.
- connect the wires of the cell to terminal blocks of instrument as described on pag. 4.
- adjust the water flow feed to 30 litres/hour. This is accomplished by turning the flowmeter knob untill the top side of the metallic float coincides with the indicator line.
- eliminate all air bubbles.
- let water flow for about 2 hours.
- adjust the ZERO trimmer to read 00,00 mg/l flowing water. This is assuming there is no chlorine in the water.
- verify the content of chlorine in the water to be tested, using a manual colorimetric method (DPD1) or using a photometer.
- turn the GAIN trimmer until it displays the same value as the colorimetric test.
- repeat this operation several times during the first days of operation and whenever the pH value changes (see HClO dissociation curve).

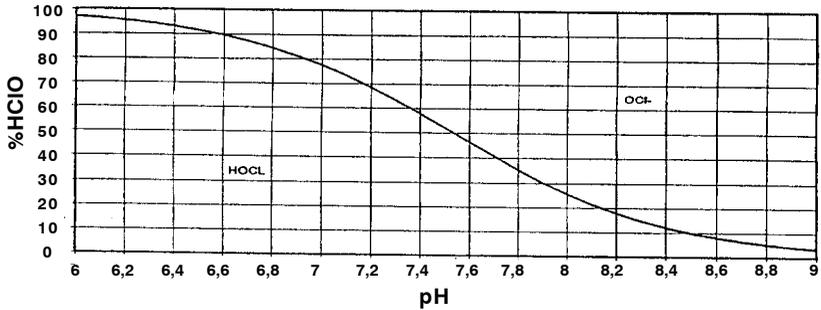
NOTE

If itsn't possible to calibrate chlorine correctly, please read as follows:
open the instrument by removing the screws
pull the display board and locate the trimmer as shown
turn the trimmer until to obtain a good CHLORINE calibration



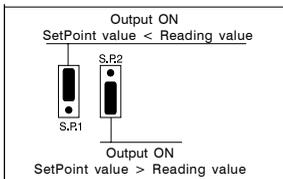
HCIO DISSOCIATION CURVE

Hypochlorous Acid



SET-POINT ADJUSTMENT

Pressing the SET-POINT 1 or 2 button, display will show the previous stored value. To change it keep SET-POINT button pressed and set the required chlorine value by using the corresponding knob. **WARNING:** when the Set-point 1 or 2 LEDs "OUT ON" is ON, there is a power of 220 VAC between terminals "220 Out S.P.1." and "220 Out S.P.2." in the terminal block on the black panel. VOLTAGE FREE CONTACT OUTPUT IS AVAILABLE UPON REQUEST. LEDs are turned of when the chlorine reading is above or below the stored value on Set-point 1 or 2. To set the instrument concerning the activation of the Set-point outputs, it is necessary to configure the internal jumpers. Remove the mask and the four screws on the front panel, remove the four screws on the rear panel of the instrument, remove the rear section of the instrument and slide toward the PCB. Locate the jumpers circled and follows the scheme showed below:



STAND-BY

On demand, is available an input signal (Stand-by) on SEPR blocks. Using this input (connecting the proxy probe using the three wires brown, blue, black) is possible to disable the SETPOINT outputs leaving the reading active. This procedure can be useful during filters cleaning or a situation in which the swimming pool recirculation is halted. When the LED on the SEPR is OFF, the pumps' outputs are disabled. The Stand-by can be activated using a N.C. contact on brown and black wires terminals. The comand can be taken from an auxiliary contact of the recirculation pump breaker or from a relay driven by the recirculation pump breaker.

ECL 1 PROBE CLEANING

After a working period of 6 months/one year (depending on the quality of the water), in case the calibration of the cell do not enable to adjust the value anymore, clean the cell as follows:

- turn off the water flow and dismantle the ECL1
- remove both the electrolyte and the membrane
- dip both the membrane and the cell into a 50% v/v HCl solution for 10 minutes
- rinse with care the cell and the membrane first with fresh water and then with electrolyte
- fill the membrane with electrolyte and riassemble the cell avoiding any contact with metallic parts
- turn on the water flow and repeat the calibration procedure
- if this procedure does not give good result and the reading is still incorrect, it is necessary replace the membrane and clean the probe by using abrasive paper included with the kit
- to reduce the maintenance of the cell, we suggest to get the sampling water after the swimming pool filter.

CURRENT OUTPUT

On terminals "Current Out", there is a proportional current signal to the displayed values ($0\div 20mA$ or $4\div 20mA$ on request):

$$0\div 10.00mg/l = 0\div 20mA ; 4\div 20mA$$

Max resistance load: 330 Ohm

Output current range is printed on the instrument label.

Output current signal without galvanic insulation, galvanic insulation is available on demand.

ACCESSORIES

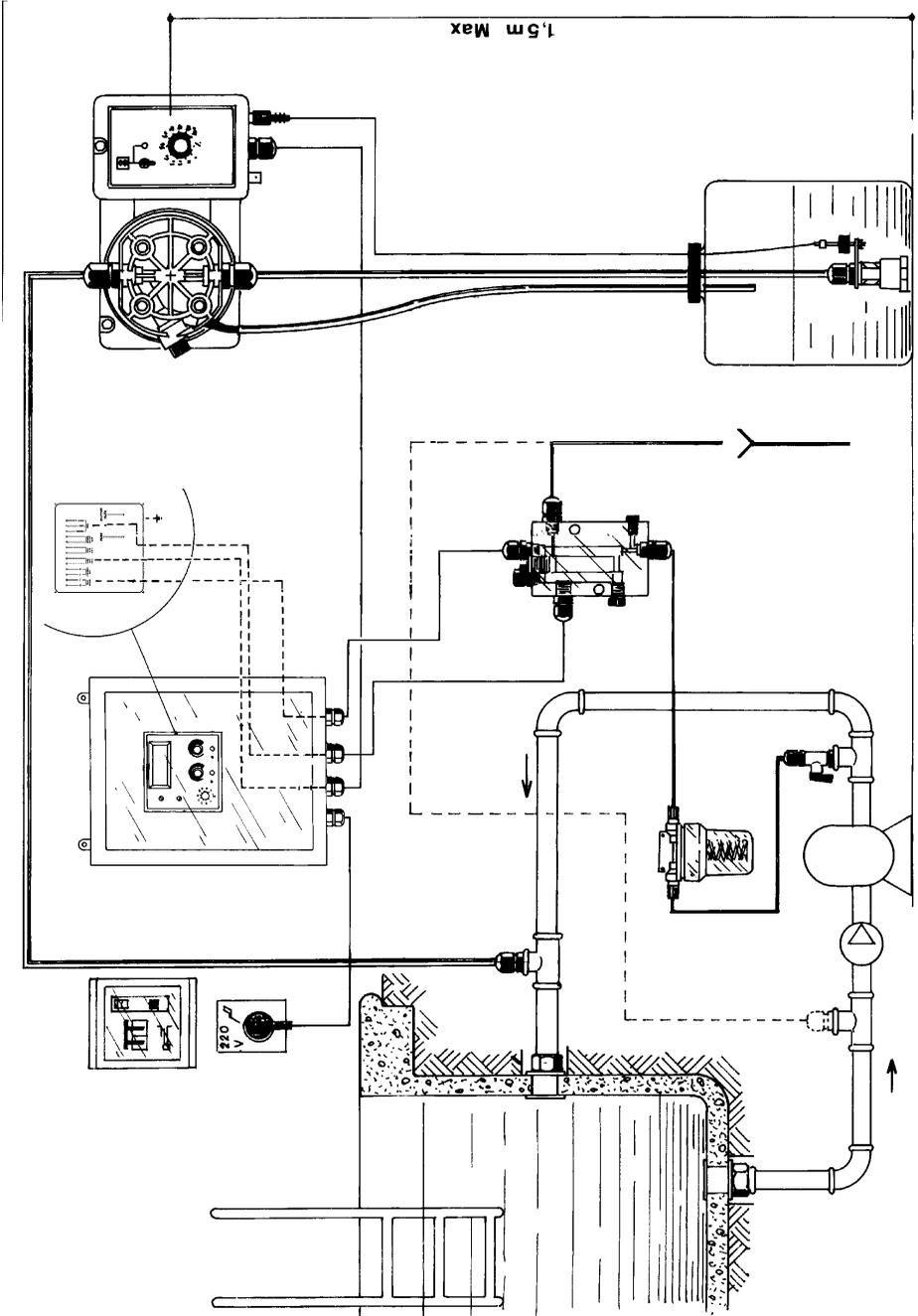
N. 2 Mounting Brackets
N. 1 5x20 1A (T) Fuse
N. 1 5x20 200mA (T) Fuse
N. 1 Instruction Manual

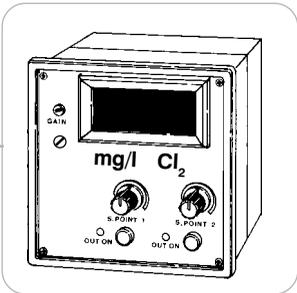
TECHNICAL CONTROLLER FEATURES

Power Supply: 230 Vac \pm 10%
Measuring Range: 0 \div 10,00 Cl₂
Resolution: \pm 0,02 mg/l
"Zero" regulation: \pm 1,0 mg/l
Hysteresis set-point : \pm 0,10 mg/l
Consumption: 3 Watt
Weight: 1 Kg
IP rate: IP40
Fuses: 1A T (output fuse); 200mA T (fuse)
Working Temperature: 0 \div 50°C



Technical features and drawings are subjected to changes and modifications without any advice.





*When dismantling an instrument please separate material types and send them according to local recycling disposal requirements. We appreciate your efforts in supporting your local Recycle Environmental Program.
Working together we'll form an active union to assure the world's invaluable resources are conserved.*