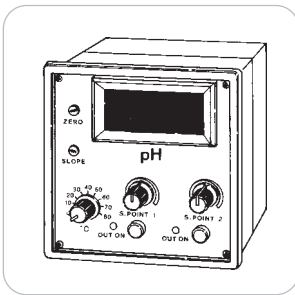




This manual contains important safety information about installation and use of this equipment. Ignoring this information could result in injuries or damages.



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



## “JPH” CONTROLLER OPERATING MANUAL

Read carefully!



ENGLISH Version

R1-09-04



“JPH” 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 authorized personnel only!

Always read chemical safety datasheet!

Always wear protective clothing when handling hazardous or unknown chemicals!

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## GENERAL DESCRIPTION

The pH instrument measures pH or REDOX (mV) potential.e.g. measuring pH and chlorine levels in swimming pools, chlorine in drinking water, neutralizing the pH of irrigation water, or for galvanizing processes. It also provides two ON-OFF set point and a current signal of between 0÷20 mA, proportional to the value appearing on display. The instrument is housed in an IP40 ABS plastic case and designed for a panel installation. All the electrical connection and the probe connection have been placed on the back panel. Max overall dimensions are 96x96x150 mm.

The instrument is provided with its own support.

## ELECTRICAL WIRINGS

Electrical wirings are made on the instrument through the green terminal block in the rear panel shown in fig. 1:



Fig.1

“Temp” temperature probe

“Current Out” 0÷20mA current output proportional to the instrument reading. (Different output ranges available)

“220 Out S.P.2” set point 2 220Vac output (Max 5A)

“220 Out S.P.1” set point 1 220Vac output (Max 5A)

“Power Supply 220V” power supply

“⊥” ground terminals (needed for correct functioning)

“PROBE” pH probe

“FUSE” instrument protection fuse (200mA T 5x20)

“OUTPUT FUSE” set point 1 and set point 2 protection fuse (1A T 5x20 standard, Max 3.15A T 5x20)

## pH-METER ADJUSTMENT

Once connected the pH probe to the instrument this adjustment is needed. Proceed as follows:

- Supply power to the instrument (220 Vac $\pm$ 10%)
- Set the (°C) marked knob to the buffer solution temperature using the instrument without automatic temperature compensation. Install the temperature probe (refer to next section of this manual) using the instrument with the automatic temperature compensation. Dip temperature probe in the buffer solution while following with this procedure.



***Abundantly rinse electrode with water and and dry it shaking before dip the electrode in the buffer solution in order to avoid solution contamination.***

- Dip the electrode in a pH 7.00 (BSB) buffer solution and shake it. Wait one minute to stabilize the instrument reading and adjust ZERO screw to have on the instrument display the buffer solution reading.
- Dip the electrode in a pH 4.00 (BSA), or pH 9.2 (BSC), buffer solution and shake it. Wait one minute to stabilize the instrument reading and adjust SLOPE screw to have on the instrument display the buffer solution reading.
- Set the °C knob on the working temperature if NOT using automatic temperature compensation.
- Install ETE temperature probe to use automatic temperature compensation.
- Put in place the pH electrode on the PED probe holder. Both pH and temperature probes can be installed in the PED probe holder.

## AUTOMATIC TEMPERATURE COMPENSATION

Automatic temperature compensation can be made using a ETE temperature probe (NTC 10Kohm). Refer to section “wirings” in this manual to know how to connect this probe to the instrument. JPH instrument is factory setted to perform automatic or manual temperature compensation as per customer order specification. If not otherways requested the instrument is factory setted to perform manual temperature compensation. Proceed as follows to change this setting :

- 1) Remove the mask in the front of the instrument and remove the four screws. Remove the four screws in the back of the instrument.
- 2) Remove the back panel and disconnect the internal BNC plug of the pH probe (Fig.2). Slide forward the instrument circuit.

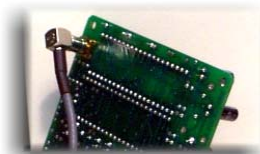


Fig.2

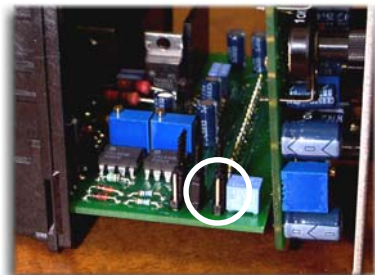


Fig.3

3) Locate jumper showed in Fig. 3 and swap its position as indicated in the jumper settings pic at the end of next section in this page.

4) Close back the instrument reversing the opening procedure. Do not forget to plug in back the pH probe.

Manual temperature setting knob (°C) does not have any effect on the instrument when automatic temperature compensation is setted.

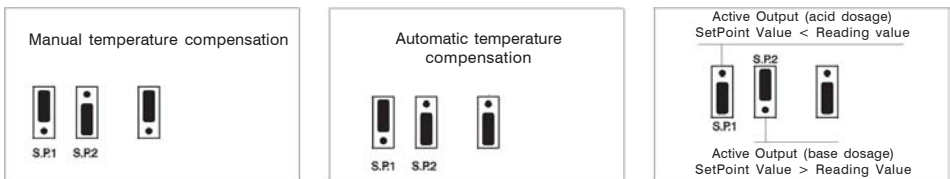
### SET-POINT ADJUSTMENT

Setted set point 1 (or set point 2) is showed on the instrument display pressing the “SetPoint 1” (or SetPoint2”). Keep pressed “SetPoint 1” (or SetPoint2”) and use the correspondent knob to change its current setting. “SetPoint 1” and SetPoint2” yellow LEDs are on when the correspondent 220V output are enabled. A free of voltage contact (N.O.) is available upon demand on “220 Out S.P.1” and “220 Out S.P.2”. “220 Out S.P.1” and “220 Out S.P.2” are active when the pH reading of the instrument is lower than the correspondent set point value, or “220 Out S.P.1” and “220 Out S.P.2” are active when the pH reading of the instrument is higher than the correspondent set point value depending on internal jumper settings. Refer to Fig.4 to locate these jumpers.



Fig.4

Enable outputs active as per following table.



## pH ELECTRODE CLEANING

pH electrode cleaning should be performed on a monthly basis to ensure a good and repeatable instrument reading. Dip for five minutes the pH electrode in HCl to clean it and then rinse abundantly with fresh water. pH electrode must be kept always wet in the protection solution used for shipping while stored unused. A buffer solution at pH 4.00 added of 1/100 KCL is a good substitute for the protection solution when it is not available. City water can substitute the protection solution for short times.



***Do not use distilled water for pH electrode storing, pH electrodes are not covered by warranty.***

## OUTPUT CURRENT

A  $0 \div 20\text{mA}$  current signal proportional to the  $0 \div 14\text{ pH}$  instrument reading is available at the "Current Out" terminals. Maximum terminals load: 330 Ohm. **Current signal without galvanic isolation. Optional galvanic isolation available upon demand.**

## ACCESSORIES

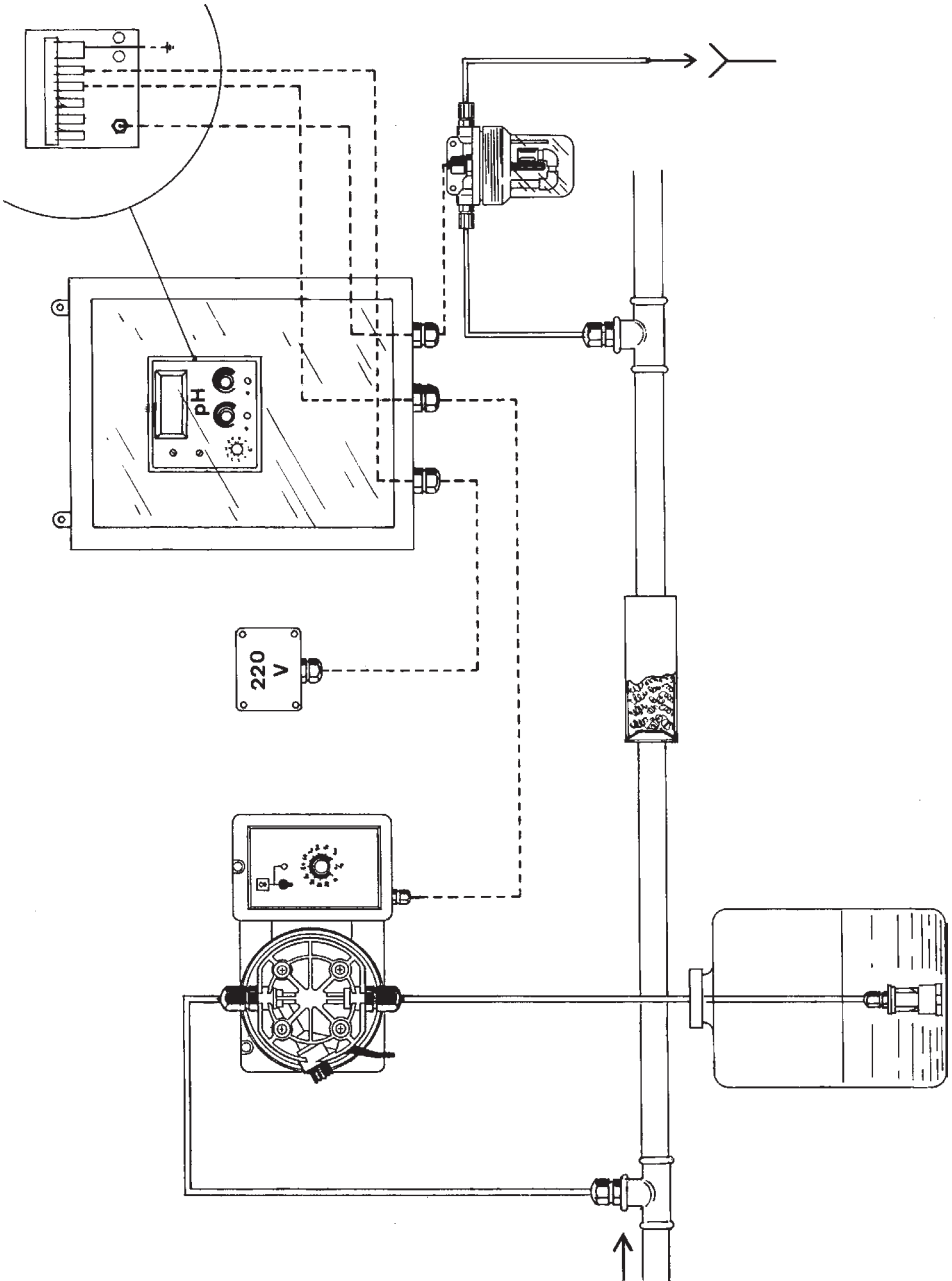
N. 2 Instrument mounting bracket  
N. 1 5x20 1A (T) Fuse  
N. 1 5x20 200mA (T) Fuse  
N. 1 Instruction Manual

## TECNICAL FEATURES

Power Supply :	220 Vac $\pm$ 10%
Reading range :	0 $\div$ 14 pH
Resolution :	$\pm$ 0.01 pH
Input Current :	20 femptoamps
Zero correction (Zero) :	$\pm$ 2 pH
Slope control (Slope) :	$\pm$ 20%
Set-point hysteresys :	$\pm$ 0.1 pH
Manual temperature setting range :	0 $\div$ 80 °C
Power consumption :	3 Watt
Weight :	1 Kg
Protection :	IP50
Fuse:	200 mA
Outputs protection fuse :	1A
Working temperature :	0 $\div$ 50°C



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

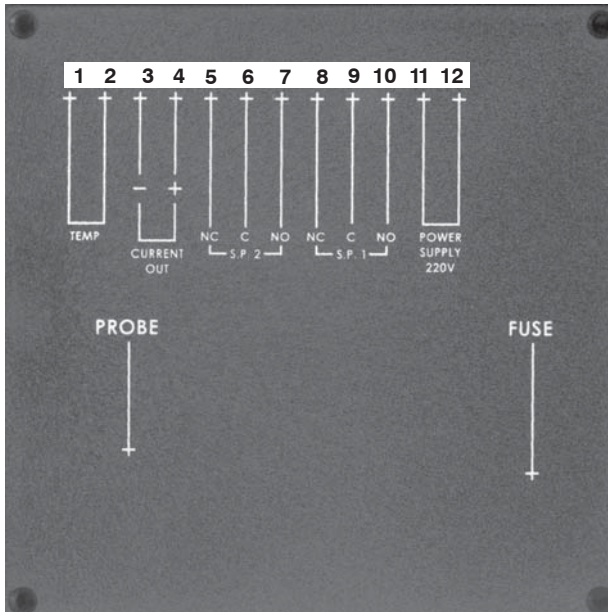






## Free Contact Version

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1-2 **“Temp”** temperature probe

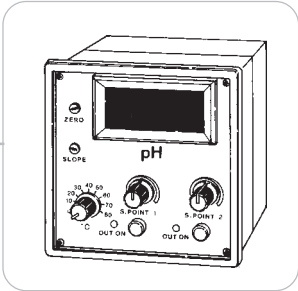
3-4 **“Current Out”** 0÷20mA current output proportional to the instrument reading. (Different output ranges available)

5-6-7 **“Out S.P.2”** set point 2 output (free contact)

8-9-10 **“220 Out S.P.1”** set point 1 output (free contact)

11-12 **“Power Supply 220V”** power supply





*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.*