Operating Manual

Pathfinder Model SK-252 pH or ORP Controller

Description

The Model SK-252 is a 1/16 DIN Microprocessor based on/off for either pH or ORP. It accepts any combination electrode for an input and has a relay, or SSR, or 4-20mA control signal for an output. All functions are programmable from the front panel; programmed values remain in memory when the power is turned off. Dual digital displays indicate the process value (pH or ORP) and the control set point. The process value is displayed in RED and the set point is in GREEN. The power supply is universal and operates on 100 to 240VAC, 50/60Hz. Automatic temperature compensation terminals on the pH controller allow this to perform with a 1000 OHM PT Sensor or with fixed resistors.

Specifications

Model	SK252pH	SK252-ORP
Range	0-14.00 pH	-100 to +1000mV
Resolution	.01 pH	1mV
Accuracy	+/- .2pH	+/- 0.2% of Span
Dead Band	Front Panel adjustable 0-50% of Span	
Main Output Relay	S>P>D>T> Relay 3 Amp @ 115VAC, Resistive Load	
Power	100 to 240 VAC, 50/60 Hz @ 3 Watts	
Operating Temperature Range	-10 to +50°C	
Storage Temperature Range	-20 TO +60°c	
Display	4 Digit Red LED's (pH, ORP), 4 Digit Green LED'S Set Point	
Dimensions	48 x 48 x 78.8 mm (1/16 DIN)	
Memory	Non-Volatile	

Installation

A. **First thing**: Upon receiving your order of the SK-252 controller check to verify that the part number and quantities agree with the enclosed packing slip. If any discrepancies exit, be sure to Contact Pathfinder Instruments immediately. Inspect all controllers for damage. Check boxes for damage boxes, scratches on the controller's enclosures and face plates, or any damage that may exit due to improper handling. If such a case exists save the shipping carton and shipping material and contact your shipping agent immediately.

B. **Mounting**: To flush mount your controller, first verify that the depth of your cabinet will accommodate the length of your instrument. Also verify that where the controllers are to be mounted there are no corrosive gasses present and no vibration, impact, water or extreme temperature exposure. Once verified, follow the diagrams below and cut the correct sized hole from the cabinets' panel; the panel should be between 1 and 8 millimeters thick. Insert each unit through the front of the panel the controller's bezel should catch and not feed through the cut out. When the controller is properly fitted in the panel, slide the plastic mounting clamp in place and tighten the clamp screws for a firm fit.

C. **Wiring Power to Controllers**: AC power is to be connected to the power input terminals located on the back of your SK252, refer to the wiring diagram in the manual or on the side of the controller for the correct terminals. Your power connections should be made with 18 gauge or larger insulated wire. A 3 amp fuse should be connected in series with power and your controller to help eliminate say problems which could occur due to an over currents situation. The SK-252's unique power supply circuit, incorporating a fee voltage transformer accepts line voltages between 100 an 240 VAC; no need to change your wiring to accommodate voltage differences within the rated voltage range.

D. **How to Connect Pumps or Solenoids**: The main control relay is programmed to turn on when the input is above the self set point, for pH control applications wire an (ACID for pH, REDUCTION for ORP) pump or solenoid to the **normally open contact**, wire the **power** voltage to **the common contact**. For (ALKALINE pumping, oxidation for ORP), change the control action so that the relay actuates below the set point as described in the programming section.

Operation:

A. **Keypad Operation:**

1. "**SEL"** Key; changes upper display to the first programming menu, advances the display though the menu and sets the programmed information into memory.

2.**"Λ"** up arrow key, increases value displayed in the green (lower) display.

3. "**V**" down arrow key, decreases value displayed in the green (lower) display.

4. Press and hold "**SEL**" key for approximately 3 seconds and "**HYS**" will appear in the upper display. Hold the "**SEL**" key for approximately 6 seconds and **P-al** will appear.

B. **Programming**

1. **How to Change the Set Point:** Press and hold the"**Λ"** up or **"V"** down arrow until the correct number appears, the new set point will be active after 5 seconds.

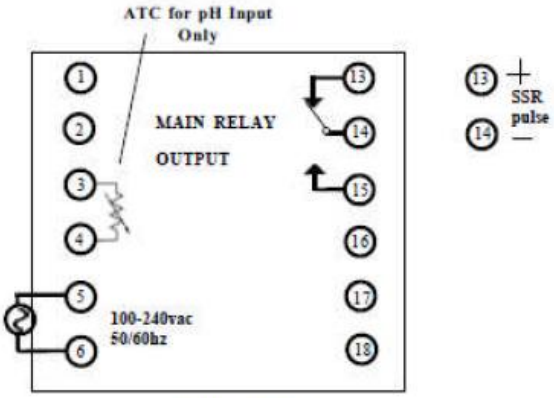
2. **How to Change the Control Action:** (Relay activates above or below the set point) – Hold the "**SEL**" key for approximately

3. **How to Program Hysteresis:** Hold the "**SEL**" key for approximately 3 seconds and "**HYS**" will appear in the upper display, the hysteresis amount will appear in the lower display, press the "**SEL**" key once and the amount will flash, change the amount to the desired value with the "**UP**" or "**DOWN**" keys, press "**SEL**" again to set it in memory. Holding the "**SEL**" key for approximately 2 seconds will return to normal operation.

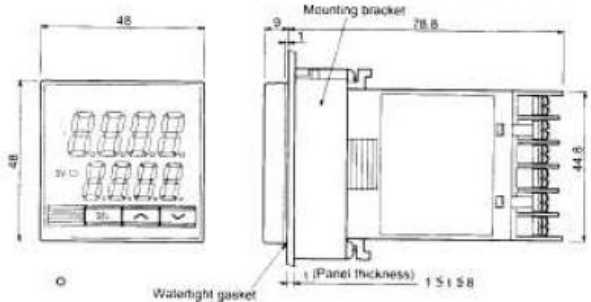
Calibration

A. **How to Calibrate pH**: The front panel has two adjustments labeled "**CAL**" and "**SLOPE**", always adjust the "**CAL**" first. Place the pH Electrode in a #7 buffer solution wait for the reading to stabilize and adjust the "**CAL**" for7.00. Rinse the electrode and place it in a #4 buffer solution, wait for the reading to stabilize and adjust the SLOPE for a reading of 4.00. Calibration complete.

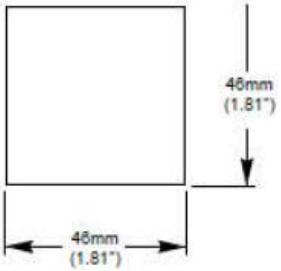
B. **How to Calibrate ORP**: The front panel has two adjustments "**ZERO**" and "**SPAN**", the ORP controller can be calibrated with a Millivolt source substituted for a probe. Short the input connector and adjust the "**ZERO**" adjustment for reading of 0000. Apply +500mV from an accurate Millivolt Source and adjust the "**SPAN**" adjustment for a reading of 0500.



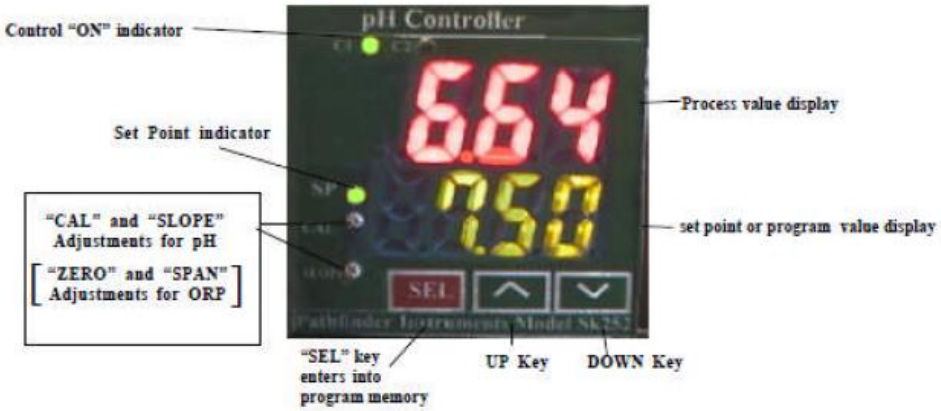
wiring diagram



Dimensions



panel cut out



Front Panel

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