

- NEMA 4X Weatherproof Enclosure
- 5 Amp control circuit set point options
- Timer options
- 100 ft. electrode extension without pre-amplification
- 4-20 mA signal output available
- Simple operation and maintenance

DESCRIPTION

Model 438A Digital pH controller is designed to power alarms, pumps, valves, and feeders to control the pH of a solution. Power is supplied when the pH value crosses the value selected by the set point knob.

This instrument is designed for heavy usage in harsh industrial environments. The NEMA 4X enclosure includes a clear window door. Electrical connections and sensor are designed for conduit installation through the bottom.

All electronics are proven solid state devices and are the same as are used in our laboratory instruments. All wiring is both mechanically attached and soldered or screw clamped terminals. There is no chance of corrosion causing interference as with spring loaded or other friction type connectors.

The power output relay has 10 amp contacts and is fused for 5 amps. There is a switch in the circuit to stop feed during calibration or turn off an alarm.

pH sensors may be located up to 100 feet from the controller without preamplification. There is no need to install delicate electronics near the solution being controlled. This instrument will work with many non preamp inline and submersion pH BNC sensors, available in the marketplace.

In the upper right of the front panel are controls for calibration of the electrode temperature, and the power switch. Two set points are standard and are located in the lower right part of the panel. Model 436A has space for four set points or timers.

The power terminal block is at the lower rear of the instrument, protected by the swing-out front panel. pH sensor and power connections are easy to get to. The set point controls may be either high or low, and are switch selectable from behind the front panel.

For certain applications it may be necessary to add both acid and caustic. Two set points permit high and low addition at different values leaving a middle range where neither is added. In other applications, the second set point may add neutralizer at a higher rate than the first one, similar to proportional control.



Optional solid state timers are available which will stop addition after a preselected time, delay feed, or pulse feed on/off/on. The timeout timer will prevent overfeed in the event of electrode failure. The delay timer will somewhat compensate for poorly mixed solutions. The pulse timer will enable the operator to easily vary the delivery rate.

MAINTENANCE

The Model 438A is warranted for two years and will require little maintenance throughout its lifetime. The electrode should be cleaned and calibrated periodically. The frequency of cleaning and calibration will depend upon the type of installation and the nature of the chemistry under control. It is a good policy to initially clean and calibrate frequently, perhaps daily, until a proper cleaning cycle is established.

Specifications	
Input current	2 picoamps maximum
Temperature control	0° to 100° C divisions
Electrode connector	BNC style
Set Point	Range: 2 to 12 pH Accuracy: 0.1 pH Stability: 0.05 pH per month Dead band: 0.10 pH
Maximum electrode distance	100 ft. nominal
Fuses	5 amp on output, ¼ amp on instrument
Power required	115 VAC 10
Display	1/2" High-Temp Liquid Crystal Display
Accuracy	0.05 when within 2 pH of a buffer
Range	0-14 pH in 0.1 divisions
Size	12 X 10 X 5
Weight	12 lbs.
Enclosure	NEMA-4X fiberglass reinforced polyester with stainless steel (pad-lockable) latch

Sensors	
81580	CPVC pH submersion sensor
81912	RYTON pH submersion/inline sensor
80880	CPVC pH inline sensor

Options			
81210	Latching relay of two set points	80440	Auto temp comp installed
81234	Special scales, specify range	80378	Additional set points
81488	Audible alarm	81423	Recorder output
81005	Interrupt timer 0-50 sec.	80382	Interrupt timer 0-50 min
81501	Timer delays addition 0-50 sec	81500	Timer delays addition 0-50 min
81575	Timer 0-50 Sec adjustable ON/OFF/ON	81412	220 VAC 60 Hz power