

HI9913

Industrial Grade pH & Conductivity Controller

with Proportional Control of Fertilization

- Alarm
 - Fail Safe Alarm System
- ATC
 - Automatic temperature compensation

HI9913 is a 2-in-1 pH and conductivity controller engineered for dosage of fertilizer solutions in hydroponics and agriculture.

HI9913 measures pH from 0 to 14 and EC from 0 to 10 mS/cm. Two separate set points can be user adjusted from 4 to 7 pH and 0 to 6 mS/cm. The relays are activated when pH exceeds the set point or conductivity falls below the desired value. Two pumps or electrovalves can be wired directly to the controller and be powered through the terminal. The operator can adjust two independent proportional settings for pH and conductivity. The time cycle is adjustable from 0 to 90 seconds, while the proportional band is 0 to 2 for both pH and EC. A matching pin/ground probe can be connected to the appropriate terminals to eliminate interference and prolong the pH electrode's life.

HI9913 provides for an alarm relay which is activated in several circumstances. These include when the pH is below the set point by the operator-adjustable threshold of 0.5 to 2.5 pH, or EC exceeds the set point by a value in the 0.5 to 2.5 mS/cm range. The alarm goes off if the pH and/or conductivity are not corrected within the operator-determined time frame of 1 to 10 minutes. The alarm can be turned off during maintenance.

Fertilization status can be ascertained from a distance through dosage and alarm LED's.

HI9913 accepts pH electrodes with BNC and conductivity probes with DIN connectors.



Specifications

HI9913

Range	0.00 to 14.00 pH; 0.00 to 10.00 mS/cm
Resolution	0.01 pH; 0.01 mS/cm
Accuracy (@25°C/77°F)	±0.02 pH; ±2% f.s. EC
Input Impedance	10 ¹² Ohm
Calibration	through "OFFSET" and "SLOPE" trimmers for pH, and "ZERO CAL" and "SLOPE CAL" for EC
Set point	from 4.0 to 7.0 pH and 1.0 to 4.0 mS/cm (EC)
EC Temperature Compensation	automatic, 0 to 50°C (32 to 122°F) with $\beta=2\%/^{\circ}\text{C}$
Proportional Control	two independent controls: pH from 0.0 to 2.0 and conductivity (EC) from 0.0 to 2.0 mS/cm with two separate time cycles from 0 to 90 seconds
Alarm Contact	terminals can be configured as normally open or normally closed (isolated output max. 2A, max. 240V, resistive load, 1,000,000 strokes). The alarm is activated if pH falls below the set point by the user selectable interval (0.0 to 2.0 pH), or conductivity exceeds the set point by more than the user selectable interval (0 to 2.0 mS/cm) or due to overdosage
Dosing Terminals	two sets of independent terminals (115 to 240V, Max.2A, 1,000,000 strokes) are activated whenever pH exceeds the pH set point and/or conductivity falls below the EC set point
Probe	any combination pH electrode with a universal BNC connector and Hanna conductivity four-ring potentiometric probe with built-in temperature sensor and DIN connector (not included)
Power Supply	±10% 115 VAC or 230 VAC ; 50/60 Hz
Environment	-10 to 50°C (14 to 122°F); RH max 95% non-condensing
Case Material	fiber-reinforced, self-extinguishing ABS
Dimensions	221 x 181 x 86 mm (8.7 x 7.1 x 3.4")
Weight	1.6 kg (3.5 lb.)
Ordering Information	HI9913 is supplied complete with instructions.

For complete list of pH calibration and electrode solutions, see section 3;
for EC solutions, see section 6