



## pH and TDS Proportional Control for Fertilization

HI 9935 is a 2-in-1 pH and TDS controller engineered for dosage of fertilizer solutions in hydroponics.

HI 9935 measures pH from 0 to 14 and TDS from 0 to 1999 ppm. Two separate setpoints can be user-adjusted from 4 to 7 pH and 900 to 1800 ppm (mg/L). The relays are activated when pH exceeds the setpoint or TDS falls below the desired value. Two pumps or electro-valves can be wired directly to the controller and be powered through the terminals. Independent proportional settings for pH and TDS can be adjusted from 0 to 90 seconds, 0 to 2.0 for pH and 0 to 400 ppm for TDS. A ground probe can be connected to the appropriate terminals to eliminate interference and prolong the pH electrodes' life.

HI 9935 provides for an alarm relay which is activated in several circumstances. These include when the pH is below the setpoints in the operator-adjustable threshold of 0.5 to 2.5 pH, or similarly, TDS exceeding the setpoint by a value in the 50 to 450 ppm range. The alarm also goes off if the pH and/or TDS are not corrected within the operator-determined time frame of 1 to 10 minutes. Moreover, the alarm configuration is switchable from a normally-closed to a normally-open state or turned off during maintenance. The fertilization status can be ascertained from a distance through dosage and alarm LED's.

HI 9935 automatically compensates for the temperature effect on TDS. It accepts pH electrodes with a BNC connector and a TDS probe with a DIN connector incorporating a temperature sensor.

### Specifications

HI 9935	
Range	0.00 to 14.00 pH; 0 to 1999 ppm (mg/L)
Resolution	0.01 pH; 1 ppm (mg/L)
Accuracy (@20°C/68°F)	±0.02 pH; ±2% F.S.
Input Impedance	10 <sup>12</sup> Ohm
Calibration	manual, 2 point for pH and 2 point for TDS, with trimmers on the front panel
Setpoint	2, selectable from 4.00 to 7.00 pH and from 900 to 1800 ppm
TDS Conversion Factor	0.65 ppm = 1 µS/cm
Temperature Compensation (TDS)	automatic, 0 to 50°C (32 to 122°F) with β = 2%/°C
Proportional Control	adjustable from 0.00 to 2.00 pH and from 0 to 400 ppm, time cycles from 0 to 90 seconds
Dosing Contact	2 powered terminals for pH and TDS corrections (240 V) Max. 2A, 1,000,000 strokes activated when pH > setpoint and TDS reading < setpoint, respectively
Alarm Relay	1, activated when pH varies more than a selectable value (0.5 to 2.5 pH) from setpoint or when max dosage time for pH (adjustable from 1 to 10 minutes) elapses; or when TDS differs more than a selectable value (50 to 450 ppm) from setpoint or when max dosage time for TDS (adjustable from 1 to 10 minutes) elapses (isolated, Max 2A-240 V, resistive load, 1,000,000 strokes)
Power Supply	110/115 Vac ±10% or 220/240 Vac ±10%; 50/60 Hz
Environment	-10 to 50°C (14 to 122°F); RH max 95% non-condensing
Dimensions	221 x 181 x 86 mm (8.7 x 7.1 x 3.4")
Weight	1.6 kg (3.5 lb.)

### Accessories

HI 7004/1L	pH 4.01 buffer solution, 1 L bottle	HI 70442L	1500 ppm calibration solution, 500 mL bottle
HI 7007/1L	pH 7.01 buffer solution, 1 L bottle	HI 8427	pH / ORP electrode simulator
		HI 931001	pH / ORP electrode simulator with display

### Ordering Information

HI 9935 is supplied complete with instructions.

1= 115 Vac power supply  
2= 230 Vac power supply

HI 9935 -

For a complete range of process electrodes and probes, see section T2.