Advanced Fertigation Controllers

Since the introduction of the first series of HI 8000 Fertigation Controllers in 1999, the HANNA instruments® Agricultural Division has gained extensive experience in the field of agricultural pH control and fertilizer injection techniques, methods, and systems.

The HI 8000 family is now comprised of 6 versatile models, each one in two configurations: panel- or wall-mounted. Each controller can control from 8 to 32 zones with 10 programs for maximum control and flexibility.

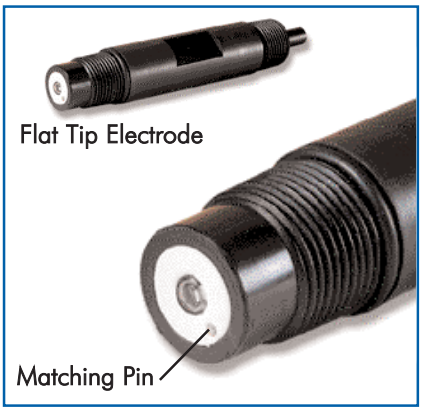
HI 8000 Series

The HI 8000 series controller is designed to precisely control the injection of an acid or alkaline solution as well as multiple fertilizers based on continuous in-line EC and pH monitoring.

To achieve exact and reliable control, multiple EC and pH probes can be installed. Up to 3 EC sensors and 2 pH sensors can be utilized. An external radiation sensor can also be used to trigger the start of programs, as well as up to 6 external tank switches which can be connected to a variety of external devices.

Dual filter cleaning programs can be set to control the operation of 2 filter systems based on a timed trigger or set to activate immediately following the completion of a selected program.

These models are also provided with an RS232 communication port for connection to a PC or to the GSM network, using our HI 504901 supervisor.



Accessories

HI 98143-22	pH/EC isolated transmitter with 4-20 mA output (2 required)	HI 504901	GSM supervisor
HI 800104	Windows® compatible software for fertigation systems	HI 8666	4-20 mA RH & temperature transmitter

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

Specifications

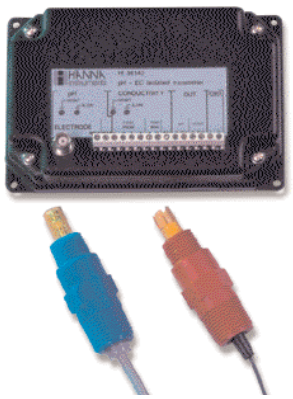
	HI 8001/2	HI 8011/2	HI 8021/2	HI 8041
Range pH	0.0 to 14.0	-	0.0 to 14.0	0.0 to 14.0
Range EC (mS/cm)	0.0 to 10.0	-	0.0 to 10.0	0.0 to 10.0
Range Solar Radiation	0 to 2000 W/m²			
Resolution	0.1 pH; 0.1 mS/cm; 1 W/m²			
Accuracy (@20°C) pH	±0.05 pH			
Accuracy (@20°C) EC	±0.07 mS/cm			
Accuracy (@20°C) Solar Radiation	±0.7 W/m²			
Inputs pH Electrode	2	-	2	2
Inputs EC Probe	3	-	3	3
Temperature Sensor	-	2	-	-
Solar Radiation Monitor	1	1	1	1
Wind Speed Sensor	-	1	-	-
Alternator Monitor	-	1	-	-
Starter Battery Monitor	-	1	-	-
Fertilizer Tank	4	4	4	4
Acid Tank	1	-	1	1
Tank Level Control	5+1	4+1	-	5+1
Differential Pressure	2	2	2	2
Irrigation Counter	1	4+1	5+1	1
Temporary Break	1			
Conditional Stoppage	1			
Outputs	1 alarm contact, 8 to 32 sector valves, 2 filters, 1 pump, 1 agitator			
Electrovalve	4+1	-	4+1	-
Motorized Electrovalve	-	-	-	4+1
Number of Programs	10			
Priority of Programs	5 levels			
Program Method	with instrument keypad or through remote PC using HI 800104 software			
Sectors	8, 16, 24, 32		8, 16, 24	
Irrigation Control	time/volume control, timetable with 1 to 5 priority levels and up to 99 repetitions per program, accumulated solar radiation, low tank level, manually, temperature gap (anti-frost)			
Power Supply	115V/230 Vac; 50/60Hz			
Environment	0 to 50°C (32 to 122°F); RH max 85% non-condensing			
Dimensions	178 x 260 x 115 mm (7.1 x 10.4 x 4.6")			
Weight	3.4 kg (7.5 lb.)			

HI 8010 Series

The HI 8010 controllers are designed for field agriculture, specifically orchards. This versatile controller line was designed to meet the challenges of olive, fruit tree and vineyard cultivation.
The HI 8010 series precisely control the addition of fertilizer utilizing dual EC sensor technology. Additional environmental sensors can be connected to start programs to fertigate based on environmental demands or interrupt programs to prevent crop damage.
The HI 8010 is designed to control the operation of a large diesel pump, as well as an antifreeze system specifically for outdoor irrigation systems.
These models are also provided with an RS232 communication port for connection to a PC or to the GSM network, using our HI 504901 supervisor.

HI 8020 Series

The HI 8020 series controller is designed to control the volumetric injection of fertilizer based on flow. The additional injection of an acid or base is driven by a continuous pH monitoring and control system.
The HI 8020 volumetric controller uses a gallon or liter-count system to determine the precise amount of fertilizer to be added to the irrigation stream. In addition to volumetric control of fertilizer injection, the controller incorporates 2 conductivity probes for additional control and triggering of alarms. Dual pH sensors can also be utilized for redundant pH control.
These models are also provided with an RS232 communication port for connection to a PC or to the GSM network, using our HI 504901 supervisor.



HI 8040 Series

The HI 8040 series controller is specifically designed to control the utilization of 2 different water sources by precisely monitoring the incoming water EC and regulating the flow from each source via control valve.
The controller regulates the valve to ensure a precise volume from each source is used to achieve the programmed incoming EC set point.
This system is essential when the fertigation water is re-circulated back to storage tanks and then reused.
Fresh water may be added to the recycled water to control EC levels prior to the additional introduction of fertilizer.

The HI 8040 is also designed to control multiple circulation and fertigation pumps. In addition, dual pH sensors can be utilized for redundant pH control.

These models are also provided with an RS232 communication port for connection to a PC or to the GSM network, using our HI 504901 supervisor.

wall mounted model

Ordering Information

Family
0: Fertigation controller with priority for pH and EC control
1: Fertigation controller with flow control (irrigation counter)
2: Fertigation controller with flow control, pH dosage and EC monitor
4: Fertigation controller with water mixing system (circulation pump)

Version
1: panel mounted
2: wall mounted (not for "4" family)

Number of sectors
01: 8 sectors
02: 16 sectors
03: 24 sectors
04: 32 sectors (where available)

Firmware language
00: English
01: Spanish
02: Italian
03: Portuguese
04: Dutch
05: French
06: Greek
07: Arabic

Power Supply
U: 115 Vac
D: 230 Vac

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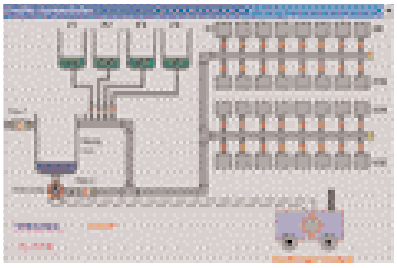
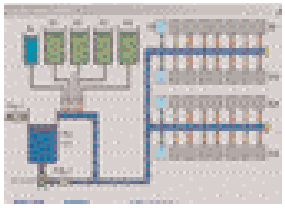
GSM Monitoring

For complete remote control or set up of the fertigation unit, you can use the HI 504901 GSM supervisor.

This transmission system, combined with the HI 800104 software, allows remote interaction between the user and the fertigation process. You can modify the parameters setting or control the system functioning from your computer, by simply establishing a modem or GSM connection with your PC or laptop.

Moreover, the HI 504901 supervisor can send alarm or information SMS to up two programmed cellular phone numbers.





Specifications

	HI 504901
Max Output Power	2 W for EGSM900; 1 W for GSM1800/1900
SIM Interface	3V SIM card
Antenna	dual band (900/1800/1900 MHz)
Digital Input Channel	supporting mechanical relays or open-collector outputs
Digital Output Channel	open-collector output, 5 mA/30V max.
Installation Category	I
Power Supply	12 Vdc adapter (included) and internal rechargeable backup battery (12 V/0.8 Ah)
RS485 Channel Towards Instruments	for connection of all instruments with RS485 in the same bus; baud rate up to 9600
RS232 Channel Towards Instruments	for connecting 2 instruments with RS232 port; baud rate up to 9600 (limited by the instrument)
RS232 Auxiliary Port	for PC connection
Environment	0 to 50°C (32 to 122°F); RH max 85% non-condensing
Enclosure	ABS case, IP54
Dimensions / Weight	240 x 200 x 98 mm (9.4 x 7.9 x 3.9") / approx. 1.4 kg (3.1 lb)

Accessories

HI 710005	115 Vac/12 Vdc power adapter	HI 920010	Serial cable for PC connection
HI 710006	230 Vac/12 Vdc power adapter		

For a complete range of process electrodes and probes, see section T2.
For a complete range of calibration, cleaning and maintenance solutions, see section F.

Ordering Information

HI 504901-1 (900/1900 MHz GSM supervisor) is supplied complete with 115 Vac/12 Vdc power adapter, HI 504901SW configuration software and instructions.

HI 504901-2 (900/1800 MHz GSM supervisor) is supplied complete with 230 Vac/12 Vdc power adapter, HI 504901SW configuration software and instructions.