

Instruction Manual

HI 98143 pH & EC Transmitter with Isolated Output

HI 98143-01	0 to 14 pH = 0 to 1 Vdc 0 to 10 mS = 0 to 1 Vdc
HI 98143-04	0 to 14 pH = 0 to 4 Vdc 0 to 10 mS = 0 to 4 Vdc
HI 98143-20	0 to 14 pH = 4 to 20 mA 0 to 10 mS = 4 to 20 mA
HI 98143-22	0 to 14 pH = 4 to 20 mA 0 to 10 mS = 4 to 20 mA



WARRANTY

These instruments are warranted for two years against defects in workmanship and materials when used for its intended purpose and maintained according to instructions. **Electrodes and probes are warranted for a period of six months.** This warranty is limited to repair or replacement free of charge.

Damages due to accident, misuse, tampering or lack of prescribed maintenance are not covered.

If service is required, contact the dealer from whom you purchased the instrument. If under warranty, report the model number, date of purchase, serial number and the nature of the failure. If the repair is not covered by the warranty, you will be notified of the charges incurred. If the instrument is to be returned to Hanna Instruments, first obtain a Returned Goods Authorization Number from the Customer Service department and then send it with shipment costs prepaid. When shipping any instrument, make sure it is properly packaged for complete protection.

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Hanna Instruments reserves the right to modify the design, construction and appearance of its products without advance notice.

Dear Customer,
Thank you for choosing a Hanna product.
This manual will provide you with the necessary information for the correct operation of the meter. Please read it carefully before using the meter.
If you need additional technical information, do not hesitate to e-mail us at tech@hannainst.com.
These instruments are in compliance with the CE directives.

PRELIMINARY EXAMINATION

Remove the instrument from the packing material and examine it carefully. If any damage has occurred during shipment, immediately notify your Dealer or the nearest Hanna Customer Service Center.

Each instrument is supplied complete with instructions.

Note: Conserve all packing material until the instrument has been observed to function correctly. Any defective item must be returned in its original packing.

GENERAL DESCRIPTION

HI 98143 is a panel mounted pH and EC transmitter specially designed to accept signals directly from a pH electrode and conductivity probe at the same time.

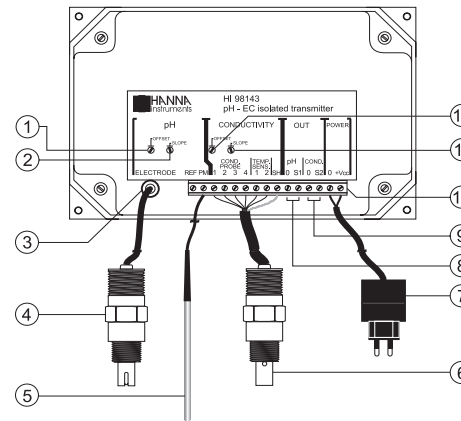
Direct connections of the probes to the transmitter assures a positive electrical connection with no signal loss.

Four models are available, transmitting at 0-1 V, 0-4 V or 4-20 mA signal. The output signals are proportional to the input signals, but independent of changes in load or cable capacitance.

Conductivity readings are compensated for temperature changes. These transmitters can be connected to any pH or conductivity controller, recorder, computer or any data monitoring device that accepts 0 to 1 V, 0 to 4 V or 4 to 20 mA input.

The HI 98143-22 model has been specifically designed to be used with the HI 8000 fertigation controllers.

FUNCTIONAL DESCRIPTION



1. pH offset calibration trimmer
2. pH slope calibration trimmer
3. BNC connector for pH electrode
4. pH electrode (not included)
5. Potential matching pin (not included)
6. Conductivity probe (not included)
7. 12-24 Vdc power adapter (not included)
8. pH output terminals
9. EC output terminals
10. Power supply terminals
11. EC slope calibration trimmer
12. EC offset calibration trimmer

ACCESSORIES

- HI 1001 "flow-thru", double junction pH electrode with BNC connector and 3 m (10')
- HI 1283 Stainless steel grounding probe with 2 m (6.6') cable
- HI 3001 "flow-thru", 4 platinum ring EC probe with built-in temperature sensor & 3 m (10') cable
- HI 7004L pH 4.01 buffer solution, 500 mL bottle
- HI 7007L pH 7.01 buffer solution, 500 mL bottle
- HI 7039L 5.00 mS/cm calibration solution, 500 mL bottle
- HI 70300L Electrode storage solution, 500 mL bottle
- HI 7061L Electrode cleaning solution, 500 mL bottle
- HI 710005 115 Vac to 12 Vdc power adapter
- HI 710006 230 Vac to 12 Vdc power adapter

SPECIFICATIONS

Range	pH	0 to 14 pH
	EC	0 to 10 mS/cm
Accuracy (@ 25°C/77°F)	pH	±0.5% f.s.
	EC	±2% f.s.
Typical EMC Deviation	pH	±2% f.s.
	EC	±2% f.s.
Isolated Output (pH and EC)		
HI 98143-01		0-1 V
HI 98143-04		0-4 V
HI 98143-20		4-20 mA (passive)
HI 98143-22		4-20 mA (active)
Calibration		Manual, 2 point, through trimmers
	pH	offset and slope trimmers
	EC	0 and 5 mS/cm trimmers
Temperature Compensation (EC only)		Automatic from 0 to 60°C with $\beta=2\%/^{\circ}\text{C}$
pH Electrode		HI 1001 pH electrode (suggested) and HI 1283 matching pin (not included)
EC Probe		HI 3001 (not included) with cell constant 2.1
Casing		IP54
Power Supply		12-24 Vdc
Environment		0 to 50°C (32 to 122°F); RH max 95%
Dimensions		160 x 105 x 31mm (6.3 x 4.1 x 1.2")
Weight		280 g (9.9 oz.)

Recommendations for Users

Before using this product, make sure that it is entirely suitable for the environment in which it is used. Operation of this instrument in residential areas could cause unacceptable interferences to radio and TV equipment. The glass bulb at the end of the electrode is sensitive to electrostatic discharges. Avoid touching this glass bulb all the time. The metal band at the end of the EC probe is sensitive to electrostatic discharges. Avoid touching this metal band all the time. During operation, ESD wrist straps should be worn to avoid possible damage to the electrode by electrostatic discharges. Any variation introduced by the user to the supplied equipment may degrade the instrument's EMC performance. To avoid electrical shock, do not use this instrument when voltages at the measurement surface exceed 24 Vac or 60 Vdc. To avoid damages or burns, do not perform any measurement in microwave ovens.