

## Instruction Manual

**Pronto** & **Pronto**  
EC TDS

HI 983303, HI 983304, HI 983306  
HI 983307, HI 983308, HI 983309

## On-line, Waterproof EC-TDS meters with Alarm



**HANNA**  
instruments

www.hannainst.com

### WARRANTY

These meters are guaranteed for two years against defects in workmanship and materials when used for their intended purpose and maintained according to instructions. The probes are guaranteed for six months. This warranty is limited to repair or replacement free of charge.

Damage due to accidents, misuse, tampering or lack of prescribed maintenance is 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 problem. 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 Technical Service department and then send it with shipping costs prepaid. When shipping any instrument, make sure it is properly packed for complete protection.

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

Dear Customer,

Thank you for choosing a Hanna Instruments Product. Please read this instruction manual carefully before using the instrument. If you need additional technical information, do not hesitate to e-mail us at tech@hannainst.com or view our worldwide contact list at www.hannainst.com.

### PRELIMINARY EXAMINATION

Remove the instrument from the packing material and examine it carefully to make sure that no damage has occurred during shipping. If there is any damage, notify your Dealer or the nearest Hanna Customer Service Center. Each instrument is supplied with:

- Conductivity probe (fixed):  
HI 7631/2 for HI 983304  
HI 7632/2 for HI 983307 and HI 983308  
HI 7634/2 for HI 983303, HI 983306 and HI 983309
- Calibration screwdriver
- 12 Vdc Power Adapter
- Instruction Manual

**Note:** Save all packing material until you are sure that the instrument functions correctly. All defective items must be returned in the original packing with the supplied accessories.

### GENERAL DESCRIPTION

These instruments are specially designed to meet the needs of simple continuous monitoring of conductivity or TDS.

The housing has been completely sealed against vapors and humidity with IP54 rating.

You can simply hang the meter right above the sample to be tested for continuous measurement.

All the meters come with a probe that compensates for the temperature variation automatically. The probe is easy to clean and requires little maintenance.

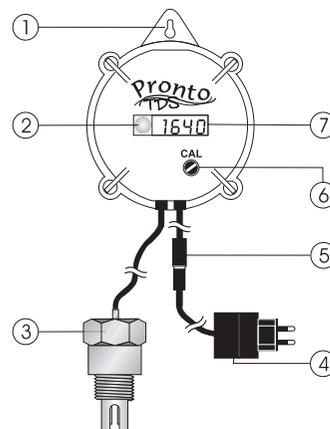
You can even select your own setpoint and be alerted of an abnormal situation with a flashing LED alarm.

Measurements are highly accurate and the meters can be calibrated at one point.

You no longer need to worry about battery changes either: the unit runs without interruption on 12 Vdc power supply.

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### FUNCTIONAL DESCRIPTION



1. Molded eye
2. Alarm LED
3. Probe (fixed)
4. 12 Vdc power adapter
5. Power supply connector
6. Calibration trimmer
7. Liquid Crystal Display

### SPECIFICATIONS

	HI 983303
Range	0 to 1990 $\mu$ S/cm
Resolution	10 $\mu$ S/cm
Setpoint	200 to 1600 $\mu$ S/cm
Hysteresis	+100 $\mu$ S/cm over setpoint
Alarm	LED blinks when the EC value is 100 $\mu$ S/cm higher than setpoint
Probe	HI 7634/2 (fixed)
	HI 983304
Range	0.00 to 19.99 $\mu$ S/cm
Resolution	0.01 $\mu$ S/cm
Setpoint	1.00 to 5.00 $\mu$ S/cm
Hysteresis	+1.00 $\mu$ S/cm over setpoint
Alarm	LED blinks when the EC value is 1.00 $\mu$ S/cm higher than setpoint
Probe	HI 7631/2 (fixed)

	HI 983306
Range	0 to 1990 ppm
Resolution	10 ppm
TDS Factor	0.5
Setpoint	200 to 1600 ppm
Hysteresis	$\pm$ 100 ppm around setpoint
Alarm	LED blinks when the TDS value is outside hysteresis range
Probe	HI 7634/2 (fixed)
	HI 983307
Range	0.00 to 9.99 mS/cm
Resolution	0.01 mS/cm
Setpoint	0.70 to 3.50 mS/cm
Hysteresis	$\pm$ 0.20 mS/cm around setpoint
Alarm	LED blinks when the EC value is outside hysteresis range
Probe	HI7632/2 (fixed)
	HI 983308
Range	0.00 to 9.99 ppt
Resolution	0.01 ppt
TDS Factor	0.5
Setpoint	0.70 to 3.50 ppt
Hysteresis	$\pm$ 0.20 around setpoint
Alarm	LED blinks when the EC value is outside hysteresis range
Probe	HI 7632/2 (fixed)
	HI 983309
Range	0 to 999 ppm
Resolution	1 ppm
TDS Factor	0.5
Setpoint	0 to 150 ppm
Hysteresis	none
Alarm	LED blinks when EC value is over setpoint
Probe	HI7634/2 (fixed)

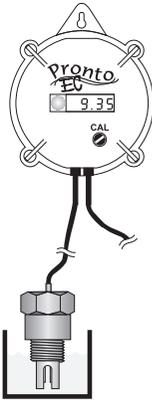
## COMMON SPECIFICATIONS

Accuracy (@ 25 °C/77 °F)	±2% f.s.
Temperature Compensation	Automatic, 5 to 50 °C (41 to 122 °F) with $\beta=2.4\%$ (HI 983304) or $\beta=2\%$ (HI 983303/6/7/8/9)
Calibration	Manual with one trimmer
Casing	IP54
Power Supply	12 Vdc adapter (included)
Dimensions	86 x 110 x 43 mm (3.4 x 4.3 x 1.7")
Weight	215 g (7.6 oz.)

## OPERATIONAL GUIDE

### TAKING MEASUREMENTS

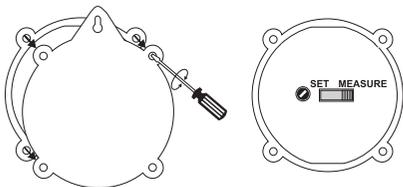
- Turn the meter on by connecting the 12 Vdc power adapter to the meter and to the mains.
- Immerse the probe in the solution, making sure that the metal pins are completely submerged.
- The LCD will show the EC or TDS value. Any initial variation may be due to temperature compensation and the fact that the probe is adjusting itself to the new sample. Allow the reading to stabilize and the meter will start continuous monitoring.



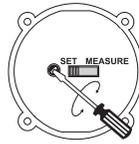
### ADJUSTING THE SETPOINT

These meters allow you to select the desired setpoint value and be alerted by a visual alarm (red LED) when an abnormal situation arises.

- To access the MEASURE/SET switch, unscrew and remove the rear panel and gasket. Then move the switch to the left (SET Mode).



- With a small screwdriver adjust the setpoint trimmer to display the desired setpoint (within the specified range; see Specifications table).



- Switch back to the right (MEASURE Mode).
- Close the meter with the rear panel, while making sure the gasket is in place before tightening the screws.
- Whenever the reading varies from the setpoint more than the hysteresis specified for your model, the red alarm LED will blink.



### PROBE MAINTENANCE

To minimize clogging and provide longer life for the probe, it is recommended to clean it often or at least once a month.

- Immerse the tip of the probe in HI 7061 Cleaning Solution for one hour.
- If a more thorough cleaning is required, brush the metal pins with very fine sandpaper.
- After cleaning or when not in use, rinse the probe with tap water.

**Note:** HI 983304 is supposed to be used for pure water applications and, therefore, probe cleaning is not required.

### Recommendations for Users

Before using these products, make sure that they are entirely suitable for the environment in which they are used. Operation of these instruments in residential areas could cause unacceptable interferences to radio and TV equipment.

The metal band at the end of the probe is sensitive to electrostatic discharges. Avoid touching this metal band at all times. During operation, ESD wrist straps should be worn to avoid possible damage to the probe 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 these instruments when voltages at the measurement surface exceed 24 Vac or 60 Vdc.

Use plastic beakers to minimize any EMC interferences.

To avoid damages or burns, do not perform any measurement in microwave ovens.

## CALIBRATION

For the greatest accuracy, frequent calibration of the instrument is recommended.



- Turn the meter on and make sure that the MEASURE/SET switch is on the MEASURE position.

- Pour a small quantity of the proper calibration solution in a beaker. If possible, use plastic beakers to minimize any EMC interference.



Use the 1413  $\mu\text{S}/\text{cm}$  solution at HI 983303, 1382 ppm for HI 983306, 5.00 mS/cm for HI 983307, 6.44 ppt for HI 983308 or 800 ppm for HI983309.

- Immerse the probe in the solution, making sure that the metal pins are completely submerged.



**Note:** In order not to affect the accuracy of measurements, it is important that the probe body does not touch nor stand close to the side walls of the beaker.

- Wait for a couple of minutes for thermal equilibrium to be reached, then tap the probe gently on the bottom, then shake it, to make sure no air bubbles have remained trapped.
- With the supplied screwdriver, adjust the calibration trimmer until the display shows the calibration solution value: 1410  $\mu\text{S}$  (HI 983303), 1380 ppm (HI 983306), 5.00 mS (HI 983307), 6.44 ppt (HI 983308) or 800 ppm HI 983309.

- The calibration is now complete and the instrument is ready for use.

The instrument should be recalibrated at least once a month and after performing probe cleaning procedure.

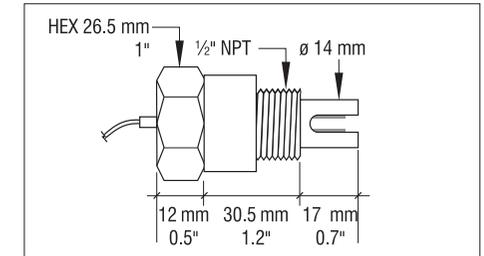
**Note:** HI 983304 is supposed to be used for pure water applications and, therefore, does not need calibration.

## ACCESSORIES

HI 7631/2\* Flow-thru conductivity probe with 1/2" NPT thread, ATC & 2 m (6.6') cable (HI 983304)

HI 7632/2\* Flow-thru conductivity probe with 1/2" NPT thread, ATC & 2 m (6.6') cable (HI 983307/8)

HI 7634/2\* Flow-thru conductivity probe with 1/2" NPT thread, ATC & 2 m (6.6') cable (HI 983303/6/9)



HI 70031P 1413  $\mu\text{S}/\text{cm}$  calibration solution, 20 mL sachet (25 pcs.)

HI 70032P 1382 ppm calibration solution, 20 mL sachet (25 pcs.)

HI 70038P 6.44 ppt calibration solution, 20 mL sachet (25 pcs.)

HI 70039P 5.00 mS/cm calibration solution, 20 mL sachet (25 pcs.)

HI 70080P 800 ppm calibration solution, 20 mL sachet (25 pcs.)

HI 70031L 1413  $\mu\text{S}/\text{cm}$  calibration solution, 500 mL bottle

HI 7039L 5.00 mS/cm calibration solution, 500 mL bottle

HI 7061L Probe cleaning solution, 500 mL bottle

HI 710005 12 Vdc power adapter, US plug

HI 710006 12 Vdc power adapter, European plug

HI 710012 12 Vdc power adapter, Australian plug

HI 710013 12 Vdc power adapter, South African plug

HI 710014 12 Vdc power adapter, UK plug

\* To be replaced by authorized technical personnel only