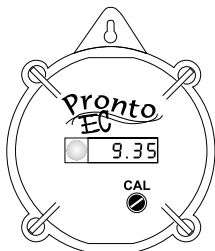


## Instruction Manual

**Pronto & Pronto**  
EC TDS

HI 983303, HI 983304, HI983306  
HI 983307, HI983308, HI983309

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



**HANNA**  
instruments  
<http://www.hannainst.com>

**CE**  
These Instruments are in  
Compliance with the CE Directives

## WARRANTY

These meters are warranted for two years against defects in workmanship and materials when used for their intended purpose and maintained according to instructions. The probes are warranted for a period of one year. 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.

To validate your warranty, fill out and return the enclosed warranty card within 14 days from the date of purchase.

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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](mailto:tech@hannainst.com).

These instruments are in compliance with the CE directives EN 50081-1 and EN 50082-1.

## 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.

The meters are supplied with:

- HI 7631/2 EC/TDS probe (HI 983304), HI 7632/2 EC/TDS probe (HI 983307, HI 983308), HI 7634/2 EC/TDS probe (HI 983303, HI 983306, HI 983309);
- Calibration screwdriver;
- 12 VDC power adapter.

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

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.

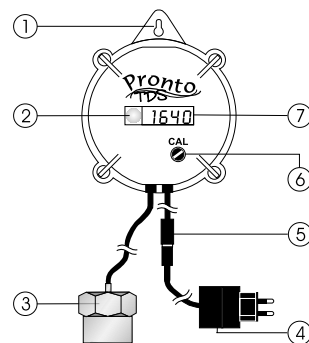
All the meters come with a probe that compensates for the temperature variation automatically. The probe is easy to clean and requires little maintenance.

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.

## FUNCTIONAL DESCRIPTION



1. Molded eye
2. Alarm LED
3. EC or TDS probe
4. 12 VDC power adapter
5. Power supply connector
6. Calibration trimmer
7. Liquid Crystal Display

## SPECIFICATIONS

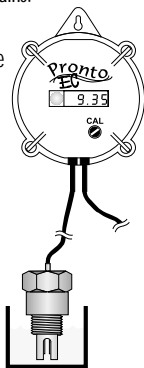
HI 983303	
Range	0 to 1990 $\mu$ S/cm (EC)
Resolution	10 $\mu$ S/cm (EC)
Setpoint	200 to 1600 $\mu$ S/cm (EC)
Hysteresis	+ 100 $\mu$ S/cm (EC) over setpoint
Alarm	LED blinks when EC value is 100 $\mu$ S/cm higher than setpoint
Probe	HI 7634/2 EC/TDS probe (included)
HI 983304	
Range	0.00 to 19.99 $\mu$ 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 EC value is 1.00 $\mu$ S/cm higher than setpoint
Probe	HI 7631/2 EC/TDS probe (included)
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 TDS value is outside hysteresis range
Probe	HI7634/2 EC/TDS probe (included)
	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 EC value is outside hysteresis range
Probe	HI7632/2 EC/TDS probe (included)
	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 EC value is outside hysteresis range
Probe	HI7632/2 EC/TDS probe (included)
	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 EC/TDS probe (included)
COMMON SPECIFICATIONS	
Accuracy (@ 25°C/77°F)	$\pm$ 2% f.s.
Typical EMC Deviation	$\pm$ 2% f.s.
Temperature Compensation	Automatic from 5 to 50°C (41 to 122°F) with $\beta$ =2.4% (HI983304) or $\beta$ =2% (HI983303/6/7/8/9)
Calibration	Manual with one trimmer
Casing	IP54
Power Supply	External 12 VDC (included)
Dimensions	86 x 94 x 33 mm (3.4 x 3.7 x 1.3")
Weight	150 g (5.3 oz.)

## OPERATIONAL GUIDE

### TAKING MEASUREMENTS

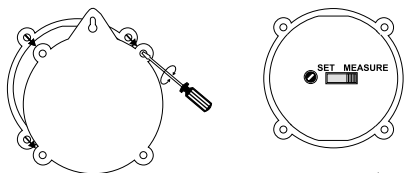
- Turn the meter on by connecting the 12 VDC power adapter to the meter and to the mains.
- Immerse the EC/TDS probe in the solution, making sure that metal pins are completely submerged.
- The LCD will show the EC or TDS value. Any initial variation may be due to temperature compensation and the fact 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

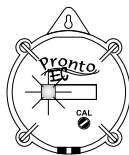
With the EC and TDS meters you can select your own setpoint and be alerted with a visual LED alarm when an abnormal situation arises.

- Unscrew and remove the rear panel and gasket seal to access the MEASURE/SET switch.



- Move the switch to the left (SET Mode).
- With a small screwdriver adjust the setpoint trimmer to display the desired value in the setpoint range specified for your model.
- Make sure the switch is moved back to the right (MEASURE Mode).
- Replace the rear panel and the gasket, ensuring the unit is properly closed.

- Whenever the EC or TDS reading varies by more than the hysteresis specified for your model from the setpoint, 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.

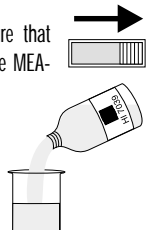
- Immerse the tip of the electrode in HI 7061 Cleaning Solution for one hour.
- If a more thorough cleaning is required, brush the metal pins with very fine sandpaper.
- After cleaning or when not in use, rinse the probe with tap water.

Note: HI 983304 does not need cleaning when used in pure water applications.

## CALIBRATION

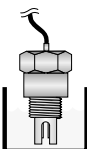
For the greatest accuracy, frequent calibration of the instrument is recommended.

- Turn the meter on and make sure that the MEASURE/SET switch is on the MEASURE mode.
- Pour a small quantity of calibration solution\* in a beaker. If possible, use plastic beakers to minimize any EMC interference.



- \* 1413µS/cm for HI983303; 1382ppm for HI983306; 5.00 mS/cm for HI983307; 6.44ppt for HI983308; 800ppm for HI983309.

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



- Note: in order not to affect the accuracy of measurements, it is important that probe body does not touch nor stand close to the side walls of the beaker. The tip can lay on the bottom of the beaker.
- Wait for a couple of minutes for thermal equilibrium to be reached.
  - Tap the probe gently on the bottom, then shake it while rotating to make sure no air bubbles have remained trapped.

- Adjust the calibration trimmer with the supplied screwdriver until the display shows 1410µS/cm (HI 983303) or 1380ppm (HI 983306) or 5.00mS/cm (HI 983307) or 6.44ppt (HI 983308) or 800ppm (HI 983309).

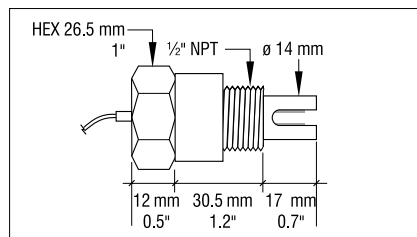
- The calibration is now complete and the instrument is ready for use.
- The instrument should be recalibrated at least once a month and after performing probe cleaning procedure.



Note: HI 983304 does not need calibration when used in pure water applications.

## ACCESSORIES

- HI 7631/2\* EC/TDS "flow thru" probe with ½" NPT thread, ATC and 2 m (6.6') cable (HI983304)
- HI 7632/2\* EC/TDS "flow thru" probe with ½" NPT thread, ATC and 2 m (6.6') cable (HI983307/8)
- HI 7634/2\* EC/TDS "flow thru" probe with ½" NPT thread, ATC and 2 m (6.6') cable (HI983303/6/9)



- HI 70031P 1,413 µS/cm (EC) calibration solution, 20 mL sachet (25 pcs)
- HI 70032P 1,382ppm (TDS) calibration solution, 20 mL sachet (25 pcs)
- HI 70038P 6.44 ppt (TDS) calibration solution, 20 mL sachet (25 pcs)
- HI 70039P 5.00 mS/cm (EC) calibration solution, 20 mL sachet (25 pcs)
- HI 70080P 800 ppm (TDS) calibration solution, 20 mL
- HI 70031L 1,413 µS/cm (EC) calibration sol., 460 mL bottle
- HI 7039L 5.00 mS/cm (EC) calibration sol., 460 mL bottle
- HI 7061L Electrode cleaning solution, 460 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, Southern Africa plug
- HI 710014 12 VDC power adapter, UK plug

\* To be replaced only by authorized service technicians

## CE DECLARATION OF CONFORMITY



DECLARATION OF CONFORMITY

We

Hanna Instruments Italia Srl  
via E.Fermi, 10  
35030 Sarmeola di Rubano - PD  
ITALY

herewith certify that the EC/TDS meters:

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

have been tested and found to be in compliance with the following regulations:

IEC 801-2 Electrostatic Discharge  
IEC 801-3 RF Radiated  
IEC 801-4 Fast Transient  
EN 55022 Radiated, Class B  
EN 61010-1 User Safety Requirement

Date of Issue: 14-4-1998

D.Volpato - Engineering Manager  
On behalf of  
Hanna Instruments Italia S.r.l.

### 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.