

*Primo* Series

EC and TDS Testers with Automatic Temperature Compensation



WARRANTY

The Primo series is warranted for one year against defects in workmanship and materials when used for their intended purpose and maintained according to instructions. 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 shipping costs prepaid. When shipping any instrument, make sure it is properly packaged for complete protection.

Dear Customer,  
Thank you for choosing a Hanna product.  
Please read carefully this instruction manual 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.

PRELIMINARY EXAMINATION

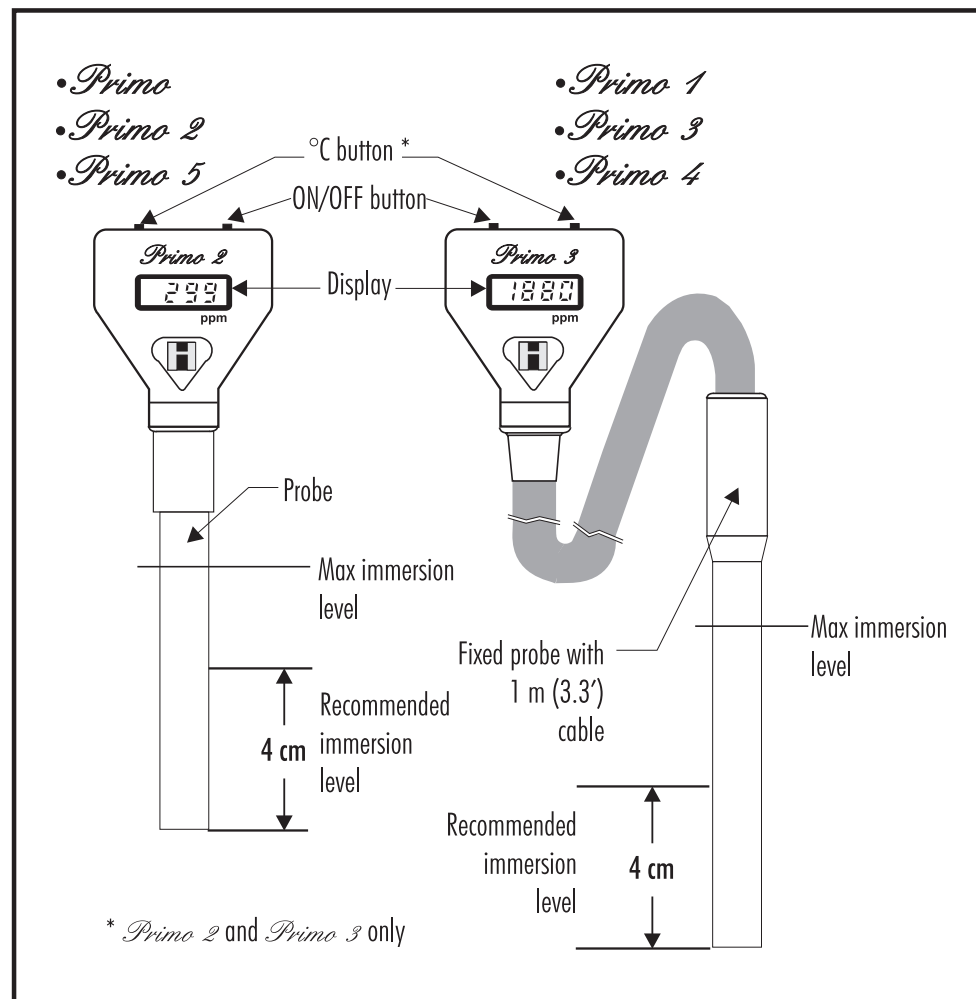
Remove the instrument from the packing material and examine it carefully. If any damage has occurred during shipment, immediately notify your Dealer or the nearest Hanna Customer Service Center.

Each meter is supplied with batteries and 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.

ACCESSORIES

- HI 70031P 1413  $\mu$ S/cm solution, 20 mL sachet, 25 pcs
- HI 70032P 1382 ppm solution, 20 mL sachet, 25 pcs
- HI 70039P 5.00 mS/cm solution, 20 mL sachet, 25 pcs
- HI 7031L 1413  $\mu$ S/cm solution, 500 mL bottle
- HI 7032L 1382 ppm solution, 500 mL bottle
- HI 7039L 5.00 mS/cm solution, 500 mL bottle



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

## SPECIFICATIONS

### *Primo, Primo 2, Primo 5*

Range	
Primo	1999 ppm (mg/L)
Primo 2	1999 ppm (mg/L) / 0.0 to 60°C
Primo 5	1999 $\mu$ S/cm

Resolution	
Primo	1 ppm (mg/L)
Primo 2	1 ppm (mg/L) / 0.1°C
Primo 5	1 $\mu$ S/cm

Accuracy (@20°C/68°F)	
Primo	$\pm 2$ % F.S.
Primo 2	$\pm 2$ % F.S. / $\pm 0.5$ °C
Primo 5	$\pm 2$ % F.S.

Calibration solution	
Primo	HI 70032 (1382 ppm)
Primo 2	HI 70032 (1382 ppm)
Primo 5	HI 70031 (1413 $\mu$ S/cm)

Calibration	
Primo	Automatic, at 1382 ppm
Primo 2	Automatic, at 1382 ppm
Primo 5	Automatic, at 1413 $\mu$ S/cm

Temperature Compensation	
	Automatic, 0 to 60°C (32 to 122°F); $\beta = 2\%/^{\circ}\text{C}$

Probe	
	Direct, fixed

Environment	
	0 to 50°C (32 to 122°F); RH max 95%

Battery Type / Life	
	2 x 1.5V / approx. 200 hours of continuous use auto-off after 5 minutes of non-use

Dimensions / Weight	
	180 x 50 x 25 mm (7.1x2.0x1.0") / 50 g (1.8 oz.)

### *Primo 1, Primo 3, Primo 4*

Range	
Primo 1	1999 ppm (mg/L)
Primo 3	1999 ppm (mg/L) / 0.0 to 60°C
Primo 4	10.00 mS/cm

Resolution	
Primo 1	1 ppm (mg/L)
Primo 3	1 ppm (mg/L) / 0.1°C
Primo 4	0.01 mS/cm

Accuracy (@20°C/68°F)	
Primo 1	$\pm 2$ % F.S.
Primo 3	$\pm 2$ % F.S. / $\pm 0.5$ °C
Primo 4	$\pm 2$ % F.S.

Calibration solution	
Primo 1	HI 70032 (1382 ppm)
Primo 3	HI 70032 (1382 ppm)
Primo 4	HI 70039 (5.00 mS/cm)

Calibration	
Primo 1	Automatic, at 1382 ppm
Primo 3	Automatic, at 1382 ppm
Primo 4	Automatic, at 5.00 mS/cm

Temperature Compensation	
	Automatic, 0 to 60°C (32 to 122°F); $\beta = 2\%/^{\circ}\text{C}$

Probe	
	Fixed, with 1 m (3.3') cable

Environment	
	0 to 50°C (32 to 122°F); RH max 95%

Battery Type / Life	
	2 x 1.5V / approx. 200 hours of continuous use auto-off after 5 minutes of non-use

Dimensioni/Peso	
	66 x 50 x 25 mm/ 50 g

## OPERATION

- Turn the meter on by pressing the ON/OFF button.
- Immerse the probe in the sample to be measured, without exceeding the maximum immersion level.
- Stir gently and wait for stable reading. The meter automatically compensates for temperature variations.
- To extend the batteries life, after 5 minutes of non-use the meter provides for auto-off.

## CALIBRATION

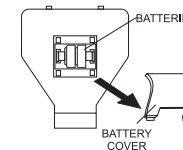
- Switch the meter on.
- Press and hold the ON/OFF button for about 3 seconds. The required calibration solution value will start blinking on the display to indicate that the calibration mode has been entered.  
"1382" for *Primo, Primo 1, Primo 2, Primo 3*  
"5.00" for *Primo 4*, and "1413" for *Primo 5*
- Immerse the probe in the proper calibration solution without exceeding the maximum immersion level.
- Stir gently and wait for about 20 seconds.
- Once the display stops blinking, the meter is calibrated and ready for use.

## BATTERIES REPLACEMENT

The "Eb" message on the LCD warns the user when the batteries have to be replaced.

Open the battery compartment and replace the both 1.5 V batteries, while paying attention to the correct polarity.

Batteries should be replaced only in a non hazardous area using the battery type specified in this instruction sheet.



**Important note:** Once the batteries have been replaced, turn the meter OFF and then ON again. Wait for about 30 seconds to allow a complete self-test, and then perform a new calibration.

## ERROR CODES

	Error in calibration, wrong calibration solution or damaged probe.
	Over range.
	Low battery indication.

## CE DECLARATION OF CONFORMITY

<b>CE</b>	
<b>DECLARATION OF CONFORMITY</b>	
We	
Hanna Instruments Italia Srl via E.Fermi, 10 35030 Sarmeola di Rubano - PD ITALY	
herewith certify that the meters:	
<b>PRIMO, PRIMO 1, PRIMO 2, PRIMO 3, PRIMO 4 and PRIMO 5</b>	
have been tested and found to be in compliance with EMC Directive 89/336/EEC and Low Voltage Directive 73/23/EEC according to the following applicable normative:	
<b>EN 50082-1:</b> Electromagnetic Compatibility - Generic Immunity Standard <b>IEC 801-2:</b> Electrostatic Discharge <b>IEC 801-3:</b> RF Radiated <b>EN 50081-1:</b> Electromagnetic Compatibility - Generic Emission Standard <b>EN 55022:</b> Radiated, Class B <b>EN 61010-1:</b> Safety requirements for electrical equipment for measurement, control and laboratory use	
Date of Issue: 04.09.2000	 A. Marsilio - Technical Director On behalf of Hanna Instruments 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 this instrument in residential areas could cause interference to radio and TV equipment. Any variation introduced by the user to the supplied equipment may degrade the instrument EMC performance.

To avoid electrical shocks, do not use this instrument when voltage at the measurement surface exceeds 24Vac or 60Vdc. To avoid damage or burns, do not perform any measurement in microwave ovens.