

## Instruction Manual

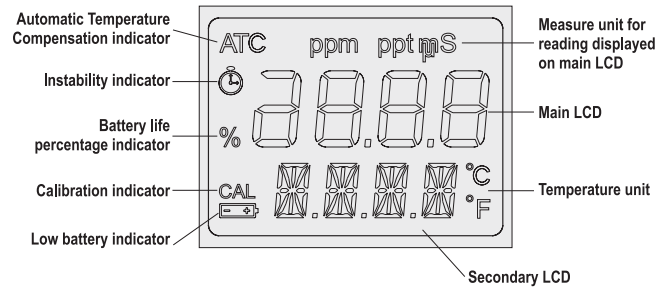
# HI 99300 • HI 99301

Portable Instruments  
for EC/TDS/°C/°F measurements  
with advanced features



15193000R1 01/05

## DISPLAY FUNCTIONAL DESCRIPTION



HI 99300 and HI 99301 come supplied complete with HI 76306 probe, 4 alkaline batteries (1.5V AAA), instructions and rugged carrying case.

## WARRANTY

All Hanna Instruments 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 six months. This warranty is limited to repair or replacement free of charge. Damage due to accidents, 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 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 Customer Service department and then send it with shipment costs prepaid. When shipping any instrument, make sure it is properly packaged for complete protection.

## SPECIFICATIONS

	HI 99300	HI 99301
Range	EC	0 to 3999 μS/cm
	TDS	0 to 2000 ppm (mg/l)
	Temperature	0.0 to 60.0°C / 32.0 to 140.0
Resolution	EC	1 μS/cm
	TDS	1 ppm (mg/l)
	Temperature	0.1°C / 0.1°F
Accuracy (@20°C/68°F)	±2% F.S. (EC/TDS) ±0.5°C / ±1°F	
Typical EMC Deviation	±2% F.S. (EC/TDS) / ±0.5°C /	
Temperature	Automatic, from 0 to 60°C	
Compensation	β adjustable from 0.0 to 2.4%/°C (BE)	
Calibration	Automatic, single point	
EC/TDS Factor	Selectable from 0.45 to 1.00 (CON)	
Probe (included)	HI 76306 with built-in temperature sensor, DIN connector and 1 m cable	
Environment	0 to 50°C (32 to 122°F); RH 100%	
Power Supply	4 alkaline batteries, 1.5V AAA with BE 500 hours of continuous use	
Dimensions	143x80x38 mm (5.6x3.2x1.5")	
Weight	320 g (11.3 oz.)	

HI 99300 and HI 99301 are in compliance with the CE directive

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## OPERATIONAL GUIDE

- Connect the supplied **HI 76306** probe to the DIN socket on the top of the meter by aligning the pins and pushing in the plug. Tighten the nut to ensure a good connection and remove the protective cap.
- Press and hold the MODE button for 2 seconds. All the used segments of the LCD will be visible for a few seconds, followed by a percent indication of the remaining battery life (eg. % 100 bATT).
- Place the probe in the sample to be tested. If possible, use plastic beakers or containers to minimize any electromagnetic interference.
- Select either EC or TDS mode ( $\mu\text{S}$  or ppm unit for **HI 99300**, mS or ppt unit for **HI 99301**) by pressing the SET/HOLD button. Temperature will always be displayed on the secondary LCD.
- Tap the probe lightly on the bottom of the container to remove air bubbles that may be trapped inside the tip.
- Allow a few minutes for the thermal equilibrium to be reached, i.e. until the instability symbol (on the top left corner of the LCD) disappears.
- The meter will show the EC or TDS value automatically compensated for temperature and the temperature of the sample.
- To freeze a reading on the LCD, press and hold the SET/HOLD button until "HOLD" appears on the secondary display. Press either button to return to normal mode.
- To turn the meter OFF, press and hold the MODE button while in normal mode. "OFF" will appear on the LCD; release the button.

## CALIBRATION PROCEDURE

- From EC measurement mode, press and hold the MODE button until "CAL" is displayed on the lower LCD.
- Release the button and immerse the probe in the proper calibration solution (**HI 7031** at 1413  $\mu\text{S}/\text{cm}$  for **HI 99300** or **HI 7030** at 12.88 mS/cm for **HI 99301**).

- Once the calibration has been automatically performed, the LCD will display OK for 1 second and return to normal measurement mode.
- The CAL symbol lights up on the LCD to indicate that the meter is calibrated.

**Note:** Since there is a known relationship between the EC and TDS reading, it is not necessary to calibrate the meter in TDS. If the conversion factor is either 0.5 or 0.7, the meter will allow a direct calibration in TDS by using the Hanna calibration solutions.

**Note:** To reset to the default calibration value, press the MODE button after entering the calibration mode. The LCD will display ESC for 1 second and the meter will return to normal mode. The CAL symbol on the LCD will disappear.

## METER SETUP

While in EC or TDS measurement mode, press and hold the MODE button until "TEMP" and the current temperature unit are displayed on the lower LCD (eg. TEMP °C). Then:

### *To select the temperature unit (°C / °F)*

- Press the SET/HOLD button to change the temperature unit, and then press the MODE button three times, until the meter returns to normal measurement mode.

### *To change the EC/TDS conversion factor (CONV) and the temperature compensation coefficient (BETA)*

- Press the MODE button again to show the current conversion factor (eg. 0.50 CONV), then press SET/HOLD to change the value.
- Press the MODE button to show the current temperature compensation coefficient  $\beta$  (eg. 2.1 BETA), then press SET/HOLD to change the temperature coefficient value.
- Press the MODE button return to normal operation.

## BATTERY REPLACEMENT

The meter displays the remaining battery percentage ever turned on. When the battery level is below 5%, the battery lights up on the LCD to indicate a low battery condition. If the level is so low as to cause erroneous reading, the Battery Ventilating System (BEPS) will automatically turn the meter off.

To change the batteries, remove the 4 screws located on the back of the meter and carefully replace all the 4 batteries while paying attention to their polarity. Reattach the back making sure that the gaskets are in place and tighten the 4 screws to ensure a watertight seal.

## ACCESSORIES

<b>HI 76306</b>	EC/TDS probe with built-in temperature sensor, connector and 1 m cable
<b>HI 70030P</b>	12.88 mS/cm solution, 20 ml sachet (25 pcs)
<b>HI 7030M</b>	12.88 mS/cm solution, 230 ml bottle
<b>HI 70031P</b>	1413 $\mu\text{S}/\text{cm}$ solution, 20 ml sachet (25 pcs)
<b>HI 7031M</b>	1413 $\mu\text{S}/\text{cm}$ solution, 230 ml bottle
<b>HI 70032P</b>	1382 ppm solution, 20 ml sachet (25 pcs)
<b>HI 7032M</b>	1382 ppm solution, 230 ml bottle
<b>HI 70442P</b>	1500 ppm solution, 20 ml sachet (25 pcs)
<b>HI 70442M</b>	1500 ppm solution, 230 ml bottle
<b>HI 70038P</b>	6.44 ppt solution, 20 ml sachet (25 pcs)
<b>HI 7038M</b>	6.44 ppt solution, 230 ml bottle
<b>HI 710007</b>	Shockproof rubber boot, blue color
<b>HI 710008</b>	Shockproof rubber boot, orange color