Eg. TEMP °C.
Use 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 reset to the default calibration

To clear a previous calibration, press the MODE button after entering the calibration mode. The lower LCD will display ESC for 1 second and the meter will return to normal measurement mode. The "CAL" symbol on the LCD will disappear. The meter will be reset to the default calibration.

Battery replacement

The meter displays the remaining battery percentage every time it is turned on. When the battery level is below 5%, the ▭ symbol on the bottom left of the LCD lights up to indicate a low battery condition. If the battery level is so low as to cause erroneous reading, the Battery Error Prevention System (BEPS) will automatically turn the meter off.

To change the batteries, remove the 4 screws located on the back of the meter. Once the back has been removed, carefully replace the 4 AAA batteries located in the compartment while paying attention to their polarity. Replace the back, making sure that the gasket is properly seated in place, and tighten the screws.

Calibration solutions

HI 77400P	pH 4.01 & 7.01 solutions, 20 mL sachets (5 each)
HI 770710P	pH 7.01 & 10.01 solutions, 20 mL sachets (5 each)
HI 70004P	pH 4.01 solution, 20 mL sachet (25 pcs)
HI 70006P	pH 6.86 solution, 20 mL sachet (25 pcs)
HI 70007P	pH 7.01 solution, 20 mL sachet (25 pcs)
HI 70009P	pH 9.18 solution, 20 mL sachet (25 pcs)
HI 70010P	pH 10.01 solution, 20 mL sachet (25 pcs)
HI 77100P	pH 7.01 & 1413 µS/cm @25°C (20 mL, 10 pcs each)
HI 77200P	pH 7.01 & 1500ppm @25°C (20 mL, 10 pcs each)
HI 77300P	pH 7.01 & 1382 ppm @25°C (20 mL, 10 pcs each)
HI 70031P	1413 µS/cm @25°C solution, 20 mL sachet (25 pcs)
HI 70442P	1500 ppm @25°C solution, 20 mL sachet (25 pcs)
HI 70032P	1382 ppm @25°C solution, 20 mL sachet (25 pcs)

Other accessories

HI 710007	Protective rubber boot

HI 991300 is in compliance with the CE directives EN 50081-1, EN 50082-1 and EN 61010-1.

IS991300R3 1/00

HANNA instruments

HI 991300 *Instruction Manual*

Portable pH/EC/TDS/Temperature Meter

SPECIFICATIONS

Range	***pH***	0.00 to 14.00
	EC	0 to 3999 µS/cm
	TDS	0 to 2000 ppm
	Temperature	0.0 to 60.0°C or 32.0 to 140.0°F
Resolution	***pH***	0.01pH
	EC	1 µS/cm
	TDS	1 ppm
	Temperature	0.1°C or 0.1°F
Accuracy (@20°C/68°F)	***pH***	±0.01pH
	EC/TDS	±2% F.S.
	Temperature	±0.5°C or ±1°F
Typical EMC Deviation	***pH***	±0.03pH
	EC/TDS	±2% F.S.
	Temperature	±0.5°C or ±1°F
Temperature Compensation	***pH***	Automatic
	EC/TDS	ß = 0.0 to 2.4%/°C
pH Calibration		1 or 2 point with auto-buffer recognition 4.01/7.01/10.01 pH or 4.01/6.86/9.18 pH
EC/TDS Calibration		Automatic (25°C/77°F) 1 point at: 1413µS/cm, 1382 ppm (0.5 conv.), 1500 ppm (0.7 conv.)
Conductivity to TDS Conversion Factor		0.45 to 1.00 (CONV)
Probe HI 1288		pH/EC/TDS/temp. probe (included)
Battery Type/Life		4 x 1.5V AAA with BEPS / 500 hours
Environment		0 to 50°C (32 to 122°F); RH 100%
Dimensions		143x80x38mm (5.6x3.2x1.5")

OPERATIONAL GUIDE

To connect the probe

Connect the ***HI 1288*** 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. Remove the protective cap from the ***HI 1288*** probe before taking any measurement.

To turn the meter on and to check battery status

Press and hold the ON/OFF/MODE button for 2 seconds. All the used segments on the LCD will be visible for a few seconds, followed by a percent indication of the remaining battery life. Eg. % 100 BATT.

To select the measurement unit (pH or EC or TDS)

Press the SET/HOLD button while in normal measurement mode. The meter will display pH or EC or TDS.Temperature will always be displayed on the bottom. Eg. pH 5.73 22.5 °C.

To freeze the display

Press and hold the SET/HOLD button until HOLD appears on the secondary display. Eg. pH 5.73 hold.
Press either button to return to normal mode.

To turn the meter off

Press and hold the ON/OFF/MODE button while in normal measurement mode. OFF will appear on the lower part of the display. Release the button.

pH MEASUREMENTS & CALIBRATION

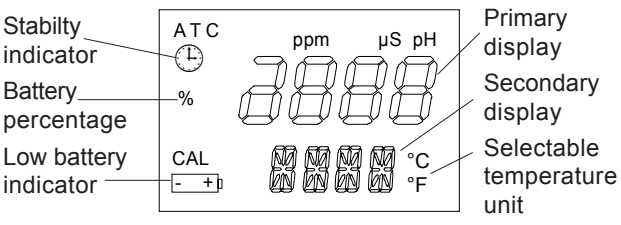
- Before taking any measurement make sure the meter has been calibrated.
- If the probe has been left dry, soak in a storage or pH 7 solution at least for one hour to reactivate it.
- Select the pH mode with the SET/HOLD button.
- Submerge the probe in the sample to be tested while stirring it gently. Wait until the ◷ stability symbol on the top left of the LCD disappears.
- The pH value automatically compensated for temperature is shown on the primary LCD while the secondary LCD shows the temperature of the sample.
- If measurements are taken in different samples successively, rinse the probe tip thoroughly to eliminate cross-contamination; and after cleaning, rinse the probe tip with some of the sample to be measured.

Calibration buffer set

- While in pH measurement mode, press and hold the MODE button until TEMP and the current temperature unit are displayed on the lower LCD. Eg. TEMP °C.
- Press the MODE button again to show the current buffer set: pH 7.01 BUFF (for 4.01/7.01/10.01) or pH 6.86 BUFF (for 4.01/6.86/9.18).
- Press the SET/HOLD button to change the buffer set.
- Press the MODE button to return to normal pH measurement mode.

pH calibration

- While in pH measurement mode, press and hold the MODE button until CAL is displayed on the lower LCD.
- Release the button. The LCD will display pH 7.01 USE or pH 6.86 USE (if you have selected the NIST buffer set).
- For a *single point pH calibration*, place the probe in any buffer from the selected buffer set (eg. pH 4.01 or pH 7.01 or pH 10.01). The meter will automatically recognize the buffer value.
  If using pH 7.01 (or 6.86 from the NIST buffer set), after recognition of the buffer press the MODE button to return to the pH measurement mode.
- For a *two point pH calibration*, place the probe in pH 7.01 (or 6.86, if you have selected the NIST buffer set). The meter will recognize the buffer value and then display pH 4.01 USE.



Place the probe in the second buffer (pH 4.01 or 10.01, or, if using NIST, pH 4.01 or 9.18). When the second buffer is recognized, the LCD will display OK for 1 second and the meter will return to normal measurement mode.

EC/TDS MEASUREMENTS & CALIBRATION

- Place the probe in the sample to be tested. Use plastic beakers or containers to minimize any electromagnetic interference.
- Select either EC or TDS mode with the SET/HOLD button.
- Tap the probe lightly on the bottom of the container to remove air bubbles that may be trapped inside the tip.
- Wait for a few minutes for the temperature sensor to reach thermal equilibirium (i.e. until the ¹ stability symbol on the top left of the LCD disappears).
- The meter will show the EC/TDS value automatically compensated for temperature and the temperature of the sample.

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

- While in EC/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.
- Press the MODE button again to show the current conversion factor. Eg. 0.50 CONV.
- Press the SET/HOLD button to change the conversion factor.
- Press the MODE button to show the current temperature compensation ß. Eg. 2.1 BETA.
- Press the SET/HOLD button to change the temperature compensation ß.
- Press the MODE button return to normal operation.

EC calibration

- While in the 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 ***HI7031*** calibration solution (µS 1413 USE).
- Once the calibration has been automatically performed, the LCD will display OK for 1 second and return to normal measurement mode.
- Since there is a known relationship between the EC and TDS reading, it is not necessary to calibrate the meter in TDS. If the EC/TDS conversion factor is either 0.5 or 0.7, the meter will allow a direct calibration in ppm by using the Hanna calibration solutions listed below.

TO CHANGE THE TEMPERATURE UNIT (FROM °C TO °F)

Press and hold the MODE button until TEMP and the current temperature unit are displayed on the secondary LCD.