











# Handhelds: TDS/EC

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	ZT-2	TDS-EZ	TDS-3 / EC-3	TDS-4
				
	<ul style="list-style-type: none"> <li>Retail economy model</li> <li>Reliable meter at an unbeatable price</li> <li>Auto shut-off</li> <li>New "HMD" line</li> </ul>	<ul style="list-style-type: none"> <li>Economy model ideal for end-users</li> <li>Fun, translucent blue housing</li> <li>Excellent as a promotional item</li> <li>Includes a TDS chart on the back of the meter</li> <li>Auto shut-off</li> </ul>	<ul style="list-style-type: none"> <li>Ideal for commercial use, with vinyl carrying case and belt clip</li> <li>Includes digital thermometer</li> <li>Hold function stores readings outside of the water; Auto-off function conserves battery power</li> <li>Large, easy-to-read display</li> <li>Strong, durable plastic</li> </ul>	<ul style="list-style-type: none"> <li>The smallest and lightest TDS meter on the market</li> <li>Sleek pocket design is perfect for personal or consumer use</li> <li>Includes hold function, auto-off function, ATC, large display, and factory calibration</li> <li>Advanced microprocessor technology</li> </ul>
TDS/EC RANGE	0-999 ppm (mg/L)	0-9990 ppm (mg/L)	0-9990 ppm (mg/L)   0-9990 $\mu$ S ( $\mu$ S/cm)	0-9990 ppm (mg/L)
TEMP. RANGE	n/a	n/a	1-80°C	n/a
ATC	Yes	n/a	Yes	Yes
ACCURACY	+/- 3%	+/- 3%	+/- 2%	+/- 2%
RESOLUTION	1 ppm	1 ppm	1 ppm   1 $\mu$ S	1 ppm
CALIBRATION	Analog to any point	Analog to any point	Analog to any point	Analog to any point
POWER SOURCE	2 x 1.5V button cell	2 x 1.5V button cell	2 x 1.5V button cell	2 x 1.5V button cell
DIMENSIONS	14 x 2.3 x 1.5 cm (5.5 x .9 x .75 in.)	15.5 x 3.1 x 2.3 cm (6.1 x 1.25 x 1 in.)	15.5 x 3.1 x 2.3 cm (6.1 x 1.25 x 1 in.)	14 x 2.3 x 1.5 cm (5.5 x .9 x .55 in.)
WEIGHT	31.2 g (1.1 oz)	56.7 g (2 oz)	76.5 g (2.7 oz) (with case)	34 g (1.2 oz)
				

	TDS-4TMA	AP-1: AquaPro	AP-2: AquaPro	COM-80	COM-100
					
	<ul style="list-style-type: none"> <li>The smallest and lightest TDS meter on the market</li> <li>Sleek pocket design is perfect for personal or consumer use</li> <li>Includes hold function, auto-off function, ATC, large display, and factory calibration</li> <li>Advanced microprocessor technology</li> <li>Aquarium retail package</li> </ul>	<ul style="list-style-type: none"> <li>Upscale retail TDS meter</li> <li>Modern, splashproof design</li> <li>Large LCD and digital calibration</li> <li>Includes a TDS chart on the back of the meter and a magnetic housing</li> <li>Four-digit display</li> </ul>	<ul style="list-style-type: none"> <li>Upscale retail EC meter</li> <li>Modern, splashproof design</li> <li>Large LCD and digital calibration</li> <li>Includes an EC chart on the back of the meter and a magnetic housing</li> <li>Four-digit display</li> </ul>	<ul style="list-style-type: none"> <li>EC/TDS HydroTester</li> <li>Water resistant body</li> <li>Large LCD and digital calibration</li> <li>Ideal for hydroponics and indoor gardening</li> <li>Four scales, easily selected by user</li> </ul>	<ul style="list-style-type: none"> <li>Professional waterproof EC/TDS meter</li> <li>Three EC-to-TDS conversion factors</li> <li>Four scales: <math>\mu</math>S, mS, ppm, ppt</li> <li>Pinpoint accuracy: resolution of 0.1</li> <li>Digital calibration and replaceable electrode</li> </ul>
TDS/EC RANGE	0-9990 ppm (mg/L)	0-5000 ppm (mg/L)	0-9999 $\mu$ S ( $\mu$ S/cm)	0-9999/9.9 $\mu$ S/mS; 0-5000/5.0 ppm/ppt	0-9990/9.99 $\mu$ S/mS; 0-8560/8.56 ppm/ppt
TEMP. RANGE	1-80°C	1-80°C / 33-176°F	1-80°C / 33-176°F	1-80°C / 33-176°F	1-80°C / 33-176°F
ATC	Yes	Yes	Yes	Yes	Yes
ACCURACY	+/- 2%	+/- 2%	+/- 2%	+/- 2%	+/- 2%
RESOLUTION	1 ppm	1 ppm	1 $\mu$ S	1 $\mu$ S; 0.1 mS; 1 ppm; 0.1 ppt	0.1 $\mu$ S; 0.01 mS; 0.1 ppm; 0.01 ppt
CALIBRATION	Analog to any point	Digital to any point	Digital to any point	Digital to any point	Digital to any point
POWER SOURCE	2 x 1.5V button cell	1 x 3V button cell	1 x 3V button cell	3 x 1.5V button cell	3 x 1.5V button cell
DIMENSIONS	14 x 2.3 x 1.5 cm (5.5 x .9 x .55 in.)	15 x 2.8 x 1.3 cm (5.9 x 1.1 x .5 in.)	15 x 2.8 x 1.3 cm (5.9 x 1.1 x .5 in.)	15.3 x 3.2 x 1.8 cm (6 x 1.3 x .7 in.)	18.5 x 3.4 x 3.4 cm (7.3 x 1.3 x 1.3 in.)
WEIGHT	34 g (1.2 oz)	42.5 g (1.5 oz)	42.5 g (1.5 oz)	53.9 g (1.9 oz)	90.7 g (3.2 oz)
					

**The most popular  
handheld TDS testers  
in the world**



## What is TDS?







Total Dissolved Solids (TDS) are the total amount of mobile charged ions, including minerals, salts or metals dissolved in a given volume of water. TDS is expressed in parts per million (ppm) or milligrams per liter (mg/L). TDS includes any inorganic element present other than the pure water molecule (H<sub>2</sub>O) and suspended solids. TDS meters are based on Electrical Conductivity (EC).

TDS affects everything that consumes, lives in, or uses water, whether organic or inorganic. While humans prefer low TDS in their drinking water, many species, such as plants and fish, need significantly higher levels. From drinking water to aquarium water or pipes to glass cleaners, it is always crucial to test for TDS or EC to ensure that the water is right for the application.

The U.S. EPA's Maximum Contaminant Level of TDS for human consumption is 500 ppm (mg/L).

# Handhelds: pH and ORP

# Handhelds: Temperature and Salt

	PH-80	PH-200	ORP-200
			
	<ul style="list-style-type: none"> <li>• Low-cost pH tester</li> <li>• Auto calibration</li> <li>• Modern design</li> <li>• Large LCD display</li> <li>• Splashproof housing</li> <li>• Automatic Temperature Compensation (ATC)</li> <li>• Auto-off, data hold &amp; low battery indicator functions</li> <li>• On-screen temperature reading</li> <li>• Factory calibrated to pH 7.0</li> <li>• Includes batteries, pH 7.0 buffer, and electrode storage solution</li> </ul>	<ul style="list-style-type: none"> <li>• Measures pH and Temperature</li> <li>• Auto-ranging single point calibration with digital fine tuning to any point</li> <li>• Includes electrode storage solution in cap</li> <li>• Large LCD display</li> <li>• Waterproof housing (IP67)</li> <li>• Automatic Temperature Compensation</li> <li>• Auto-off, data hold, low battery indicator and onscreen diagnostic functions</li> <li>• Replaceable sensor</li> <li>• Factory calibrated to pH 7.0</li> <li>• Includes lanyard, batteries, pH 7.0 buffer powder packet and storage solution</li> </ul>	<ul style="list-style-type: none"> <li>• Measures ORP and Temperature</li> <li>• Digital calibration by push button</li> <li>• Platinum sensor and glass reference cell</li> <li>• Large LCD display</li> <li>• Waterproof housing (IP67)</li> <li>• Automatic Temperature Compensation</li> <li>• Auto-off, data hold &amp; low battery indicator functions</li> <li>• Replaceable sensor</li> <li>• Factory calibrated to +200mV</li> <li>• Includes lanyard, batteries and extra storage solution</li> </ul>
RANGE	0.0 - 14.0 pH	0.00 - 14.00 pH	-999 to +1000 mV
TEMP. RANGE	1-80°C (33-176°F)	1-80°C (33-176°F)	1-80°C (33-176°F)
RESOLUTION	0.1 pH; 0.1°C/F	0.01 pH; 0.1°C/F	1 mV; 0.1°C/F
ACCURACY	+/- 2%	+/- .02 pH	0.5% (+/- 2mV)
CALIBRATION	Automatic digital calibration to 4.0, 7.0 or 10.0	Auto-ranging to 4, 7 or 10 pH, digital fine tuning	Digital calibration by push button
ELECTRODE	Glass sensor and reference tube	Replaceable glass sensor and reference tube	Replaceable platinum sensor and glass ref. tube
HOUSING	Splashproof	Waterproof (IP67; floats)	Waterproof (IP67; floats)
POWER SOURCE	1 x 3V button cell batteries (included)	3 x 1.5V button cell (included)	3 x 1.5V button cell batteries (included)
DIMENSIONS	15.3 x 3.2 x 1.8 cm (6.0 x 1.3 x 0.7 in)	18.5 x 3.4 x 3.4 cm (7.3 x 1.3 x 1.3 in)	18.5 x 3.4 x 3.4 cm (7.3 x 1.3 x 1.3 in)
WEIGHT	53.9 g (1.9 oz)	96.4 g (3.4 oz)	96.4 g (3.4 oz)
			

	TM-1	SB-1000 (High Range Salt Meter)
		
	<ul style="list-style-type: none"> <li>• Industrial grade digital thermometer</li> <li>• Heavy duty thermometer measures solids, liquids or gases</li> <li>• Long probe with extended cable</li> <li>• Includes convenient wallet-style carrying case</li> </ul>	<ul style="list-style-type: none"> <li>• Salt meter with measuring spoon (percentage of salt)</li> <li>• Ideal for pools, saltwater aquariums and food preparation</li> <li>• Extra wide range</li> <li>• Large LCD display - horizontal angle for easy viewing</li> <li>• Waterproof housing</li> <li>• Automatic Temperature Compensation</li> </ul>
RANGE		0.0 - 10%; 0.0 - 100 ppt
TEMP. RANGE	-50 to 250°C (-58 to 482°F)	1 to 99°C (33 to 211°F)
RESOLUTION	0.1°C/F	0.1%; 0.1 ppt; Temperature resolution is 0.1°C/F
ACCURACY	± 1°C (-10 to 100°C), ± 2°C (101 to 200°C), ± 3°C (-50 to -10°C), ± 5°C (200 to 250°C)	+/- 0.1%; Temperature accuracy is +/- 1°C
CALIBRATION	Analog	Digital calibration by push button
ELECTRODE	6.35 cm (2-1/2") stainless steel probe with 50.8 cm (20") cable	Platinum electrodes in measuring spoon
HOUSING	Splashproof, enclosed in wallet-style case	Waterproof (submersible; floats)
POWER SOURCE	2 x 1.5V button cell batteries (included)	3 x 1.5V button cell batteries (included)
DIMENSIONS	5.4 x 10.8 x 1.2 cm (2.1 x 4.2 x .5 in)	18.5 x 3.4 x 3.4 cm (7.3 x 1.3 x 1.3 in)
WEIGHT	85.4 g (3 oz)	82.2 g (2.9 oz)

## Tips For Better Water Testing

- Always consult the instruction manual prior to use.
- Always be sure an instrument is properly calibrated. ORP and pH meters need to be calibrated frequently. TDS and EC meters will retain their calibration longer.
- HM Digital meters are factory calibrated as a convenience for the customer. Recalibration may be required.
- Never touch a sensor pin, electrode or reference cell. Skin oils will affect readings.
- Always lightly swirl a meter in the water to dislodge any trapped air bubbles.
- There are many factors that affect water testing, such as water pressure and static electricity. Minor fluctuations or discrepancies in readings are normal.
- Never store an instrument in high heat or humidity.

## What is ORP?

**ORP (Oxidation Reduction Potential), or Redox, is a measurement of water's ability to oxidize contaminants.**

**The higher the ORP, the greater the number of oxidizing agents.**