

## analytical instruments & pocket-sized testers



ETI offers a comprehensive range of analytical meters including pH, conductivity and dissolved oxygen meters. These instruments are designed as portable laboratory analysis testers for use in a wide range of industries.

### applications

These analytical meters can be used in many areas, for example:

- hydroponics
- food production
- water quality
- process industry
- laboratories
- fish farming
- aquariums
- agriculture

### pH meters

The pH (potential hydrogen) level of any material or substance is defined by the acidity or alkalinity of that substance and is represented on a scale of 0 to 14; 7pH being neutral, 0pH acidic and 14pH alkaline. This factor can affect many parameters in nearly all types of process or production.



### TDS meters

Conductivity and TDS meters are most commonly used to measure the concentration of dissolved solids in liquids. Conductivity meters utilise a substance's ability to conduct an electric current to give a reading in microSiemens ( $\mu\text{S}$ ) or milli-Siemens (mS). Some TDS instruments automatically convert the conductivity value into parts per million (ppm) thus providing a direct reading of the dissolved solids concentration.

### Redox meters

Redox meters are similar to the pH meters that quantify acidic or alkaline solutions. Liquids can also be graded as oxidising or reducing based on Redox measurements, sometimes referred to as ORP (oxidation reduction potential). Oxidation is a process during which a molecule or ion loses electrons. Redox meters are used to monitor many processes, particularly those involving reversible actions.

### dissolved oxygen meters

Dissolved oxygen meters are used to determine the quantity of dissolved oxygen in liquids, primarily water. The instruments give a reading/measurement in parts per million (ppm). The quantity of dissolved oxygen in water is a good indicator of water quality.

# pH testers

## pocket-sized meters

### pH PAL tester

The pH PAL tester replaces pH litmus paper. This easy to use instrument does the work of more than 300 rolls of indicator paper. The pH PAL is a reliable, robust portable pH tester housed in a water resistant case.

The instrument features an easy to read 6mm LCD display indicating pH over the range of 0 to 14pH with a resolution of 0.1pH and an accuracy of  $\pm 0.2$ pH. The pH PAL's operating temperature range is 0 to  $+50^{\circ}\text{C}$ .

The pH PAL pocket-sized meter is ideal for measuring pH in many areas including industrial processing, hydroponics, swimming pools etc.

order code	description
813-510	pH PAL tester

### Senz pH tester

The Senz pH tester is a user-friendly and simple to use pH meter. Calibration is just a touch of the CAL button and the measurement can be activated to manually hold or to obtain an end-point reading automatically.

The unit is housed in a water resistant case and features an easy to read, 8mm LCD display indicating pH over the range of 0 to 14pH with a resolution of 0.1pH and an accuracy of  $\pm 0.2$ pH. The ambient operating temperature range of the Senz pH meter is 0 to  $+50^{\circ}\text{C}$ .

The Senz pH pocket-sized meter is ideal for measuring pH in many areas including industrial processing, hydroponics, swimming pools etc.

order code	description
813-560	Senz pH tester

### Senz pH Pro tester

The Senz pH Pro tester features a clear, easy to read, 8mm LCD display. The unit utilises a glass electrode in conjunction with the reference electrode. Calibration is just a touch of the CAL button and the measurement can be activated to manually hold or to obtain an end-point reading automatically.

The pH Pro pocket-sized tester indicates pH over the range of 0 to 14pH with a resolution of 0.01pH and an accuracy of  $\pm 0.05$ pH. The pH readings are automatically compensated over the operating range of 0 to  $70^{\circ}\text{C}$ .

The Senz pH Pro pocket-sized meter is ideal for measuring pH in many areas including industrial processing, hydroponics, swimming pools etc.

order code	description
813-812	Senz pH Pro tester



specification	pH PAL tester
range	0 to 14pH
resolution	0.1pH
accuracy	$\pm 0.2$ pH
battery	4 x 1.5 volt LR44 button cell
battery life	200 hours
display	6mm LCD
dimensions	15 x 32 x 147mm
weight	60 grams



specification	Senz pH tester
range	0 to 14pH
resolution	0.1pH
accuracy	$\pm 0.2$ pH
battery	4 x 1.5 volt LR44 button cell
battery life	150 hours
display	8mm LCD
dimensions	15 x 32 x 170mm
weight	70 grams



specification	Senz pH Pro tester
range	0 to 14pH
resolution	0.01pH
accuracy	$\pm 0.05$ pH
battery	4 x 1.5 volt LR44 button cell
battery life	150 hours
display	8mm LCD
dimensions	15 x 32 x 170mm
weight	70 grams

## WalkLAB

### pH, mV & °C meter

- ✓ portable analysis instrument
- ✓ simultaneously displays pH & temperature

The WalkLAB microprocessor pH meter is a three-in-one instrument measuring pH, mV and temperature. The instrument features a clear LCD display and indicates pH over the range of 0 to 14pH, mV over the range of -999 to +999mV and temperature 0 to +99.9°C.

The pH meter simultaneously displays pH and temperature and incorporates a simple to use auto-calibration feature. The instrument incorporates an easy to use membrane keypad and is housed in an ABS plastic zip case.

The pH meter is supplied as a complete kit; a pH electrode, temperature probe and buffer solutions, in a PVC carrying case. For full details of a range of optional pH electrodes, see page opposite.



specification	pH	mV	temperature
range	0 to 14pH	±999mV	0 to +99.9°C
resolution	0.01pH	1mV	0.1°C
accuracy	±0.01pH	±1mV	±0.5°C
battery & battery life	9 volt PP3 alkaline - 300 hours		
display	custom LCD		
dimensions	32 x 83 x 163mm		
weight	350 grams		

order code	description
813-625	WalkLAB three-in-one meter

°C

AUTO  
OFF

pH/mV

## MicroBench

### pH, mV & °C meter

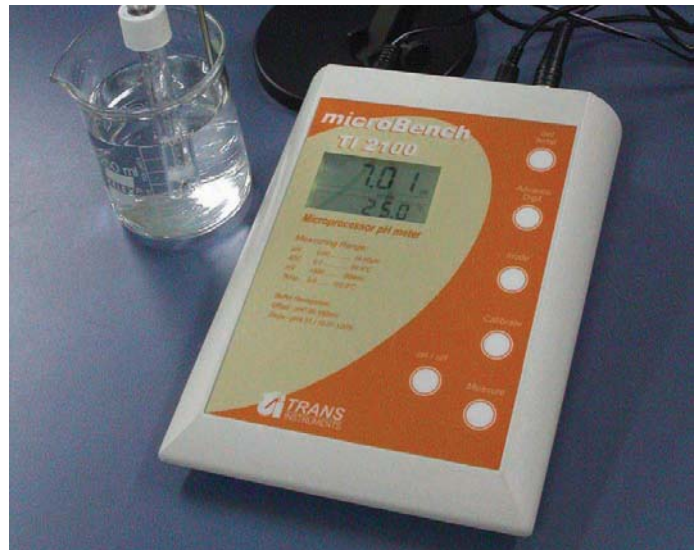
- ✓ ideal for laboratory applications
- ✓ range 0 to 14pH & 0.01pH resolution

The MicroBench pH meter is an economical bench top, mains-powered pH meter that is suitable for basic laboratory applications, educational institutions and similar.

The MicroBench features an easy to read LCD display that indicates pH over the range of 0 to 14pH, mV over the range of -999 to +999mV and temperature 0 to +99.9°C.

The unit is housed in an ABS splashproof case with an easy to use membrane keypad. The MicroBench pH meter is supplied with a power adaptor but no probes/electrodes. For full details of the range of optional pH electrodes, see page opposite.

order code	description
813-650	MicroBench pH meter
823-501	pH electrode
813-626	ATC temperature probe



specification	pH	mV	temperature
range	0 to 14pH	±999mV	0 to +99.9°C
resolution	0.01pH	1mV	0.1°C
accuracy	±0.01pH	±1mV	±0.5°C
power	AC/DC adaptor 110/230 volt AC/12 volt DC		
display	custom LCD		
dimensions	55 x 150 x 200mm		
weight	500 grams (excluding power adaptor)		





°C

pH/mV

IP65

## pH electrodes & accessories

pH meters are only part of the system, of equal importance is the design of the pH probes that are used to physically measure the product. This range of standard hand held pH electrodes are fully interchangeable via a BNC connector and are designed for use with the WalkLAB and MicroBench pH meters or similar pH meters.

		order code	
<b>general purpose electrode</b>  Ø12 x 120mm	This plastic bodied, electrode is ideal for measuring the pH in liquids and semi-solids in a wide variety of applications including food processing, agriculture and laboratories.	823-501	
<b>6mm spear-shaped electrode</b>  Ø6 x 120mm	This glass penetration pH electrode is suitable for measuring the pH in a variety of applications. The probe is ideal for inserting into semi-solid and soft materials.	823-503	
<b>12mm spear-shaped electrode</b>  Ø12 x 120mm	This glass penetration pH electrode is ideal for insertion into semi-solid materials or compost/soil in a wide variety of applications including food processing and agriculture.	823-502	
<b>knife probe electrode</b>  Ø15 x 150mm	This stainless steel sheathed glass pH electrode is ideal for insertion into meat, cheese or similar. The knife probe can also be used in a variety of applications in food processing and agriculture.	823-510	

### pH buffer solutions

These ready-made pH buffer solutions are suitable for checking pH instrumentation and pH electrodes.

Buffer solutions are available for 4.01pH, 7.00pH and 10.01pH.

All buffer solutions are supplied in 100ml bottles.



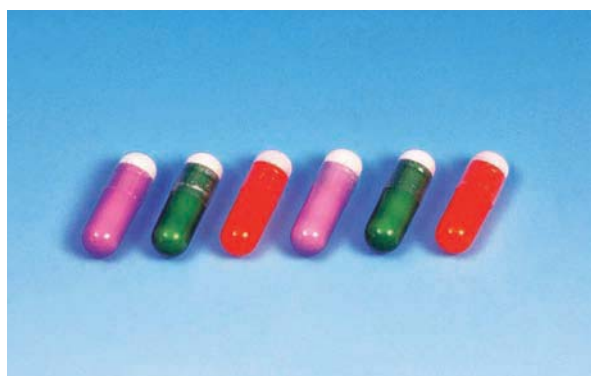
order code	description
816-050	4.01pH buffer solution
816-051	7.00pH buffer solution
816-052	10.01pH buffer solution

### pH buffer capsules

These DIY pH buffer capsules are available in 3 standard values, 4pH, 7pH and 9pH.

Each capsule makes 100ml of solution when mixed with distilled water.

Supplied in packs of 10 capsules.



order code	description
816-004	4pH (pack of 10) buffer capsules
816-007	7pH (pack of 10) buffer capsules
816-009	9pH (pack of 10) buffer capsules

# WalkLAB

## dissolved oxygen meter

- ✓ portable analysis instrument
- ✓ supplied as a complete kit

The WalkLAB dissolved oxygen meter is designed to measure the quantity of dissolved oxygen in water. Applications for the dissolved oxygen meter include the monitoring of industrial waste where low concentrations indicate possible pollution. Another important area is fish farming, where oxygen levels need to be monitored on a regular basis.

The dissolved oxygen meter features a clear LCD display that indicates the dissolved oxygen in water in parts per million (ppm) over the range of 0 to 20.0ppm (mg/L) with a 0.1ppm resolution.

The dissolved oxygen meter is supplied as a complete kit that contains a WalkLAB dissolved oxygen meter, a DO probe, an electrolyte solution and replacement membrane caps, all housed in a PVC carrying case.



specification	WalkLAB
range	0 to 20.0ppm (mg/L)
resolution	0.1ppm (mg/L)
accuracy	±0.4ppm (mg/L)
battery	9 volt PP3 alkaline
battery life	100 hours
display	custom LCD
dimensions	35 x 83 x 164mm
weight	300 grams

order code	description
813-600	WalkLAB dissolved oxygen meter

DO

IP65

# WalkLAB Pro

## conductivity meter

- ✓ simple to use, supplied as a complete kit
- ✓ portable analysis instrument

The WalkLAB conductivity meter measures conductivity from 0.1 $\mu$ S to 100mS in four different ranges. The ranges of measurement ensure the highest accuracy possible for the application. All the ranges can be accessed at the touch of a button without the need to change the probe. This makes it easy to switch applications without any recalibration.

The meter is ideal for use in the water treatment, brewery and food processing industries to establish concentration of dissolved solids.

The conductivity meter is supplied as a kit that contains a WalkLAB conductivity meter, a conductivity probe and two bottles of calibration solution, housed in a PVC carrying case.



specification	WalkLAB Pro conductivity meter			
range	0 to 199.9 $\mu$ S	0 to 1999 $\mu$ S	0 to 19.99mS	0 to 100mS
resolution	0.1 $\mu$ S	1 $\mu$ S	0.01mS	0.1mS
accuracy	±2% full scale			
battery	9 volt PP3 alkaline			
battery life	100 hours			
display	custom LCD			
dimensions	35 x 83 x 164mm			
weight	330 grams			

order code	description
813-610	WalkLAB Pro conductivity meter

AUTO  
OFF

TDS

# TDS/ORP testers

## pocket-sized meters

### TDS conductivity testers

These TDS conductivity testers provide the ideal solution for measuring ppm or  $\mu\text{S}$ . The TDS testers are ideal for monitoring a variety of applications including the amount of salts or dissolved solids in water. The readings are automatically temperature compensated over the range of 0 to  $+50^\circ\text{C}$ .

There are two models of both the TDS and conductivity testers, suitable for either low or high concentrations of total dissolved solids in liquids.

order code	description
813-525	TDS1 ppm tester
813-526	TDS2 ppm tester
813-527	TDS3 $\mu\text{Siemen}$ tester
813-528	TDS4 $\mu\text{Siemen}$ tester



specification	TDS1	TDS2	TDS3	TDS4
range	10-1990	100-9999	10-1990	100-19900
resolution	10ppm	100ppm	10 $\mu\text{S}$	100 $\mu\text{S}$
accuracy	$\pm 2\%$ of full scale			
battery	4 x 1.5 volt LR44 button cell			
battery life	100 hours			
display	6mm LCD			
dimensions	15 x 32 x 147mm			
weight	55 grams			

### Senz TDS testers

These conductivity and TDS testers will ensure quick and accurate readings of conductivity and total dissolved solids (TDS). Each TDS tester is housed in a water resistant pen-shaped case. The units incorporate automatic temperature compensation and an auto power off facility. The testers are ideal for testing water treatment processes, dilution of chemicals etc.

There are two models of both the TDS and conductivity testers, suitable for either low or high concentrations of total dissolved solids in liquids.

order code	description
813-535	Senz TDS1 ppm tester
813-536	Senz TDS2 ppm tester
813-537	Senz $\mu\text{Siemen}$ tester
813-538	Senz mSiemen tester



specification	TDS1	TDS2	$\mu\text{Siemen}$	mSiemen
range	0 to 1990	0 to 10000	0 to 1990	0 to 19.9
resolution	10ppm	100ppm	10 $\mu\text{S}$	0.1mS
accuracy	$\pm 2\%$ of full scale			
battery	4 x 1.5 volt LR44 button cell			
battery life	100 hours			
display	8mm LCD			
dimensions	15 x 32 x 170mm			
weight	55 grams			

### Senz Redox tester

This easy to use and lightweight Redox potential value tester is ideal for oxidation-reduction potential (ORP) measurements.

The instrument is suitable for a wide variety of applications, e.g. monitoring water, pollution, chromatic wastes, oxidation of cyanide, bleaching of pulp etc.

The Redox tester is housed in a robust, water resistant case and measures mV over the range of  $+999$  to  $-999\text{mV}$  with a 1mV resolution and an accuracy of  $\pm 40\text{mV}$ .

order code	description
813-520	Senz Redox tester



specification	Redox tester
range	-999 to +999mV
resolution	1mV
accuracy	$\pm 40\text{mV}$
battery	4 x 1.5 volt LR44 button cell
battery life	150 hours
display	8mm LCD
dimensions	15 x 32 x 170mm
weight	65 grams