

pH/ORP/Ion

The measure of acidity or alkalinity of a liquid.

pH/ORP/Ion



Tester:

1. pHTestr® 30
2. pHTestr® 20
3. pHTestr® 10
4. EcoTestr pH 2
5. pHTestr® 10BNC
6. pH Spear
7. ORPTestr® 10
8. ORPTestr® 10BNC

Handheld:

1. CyberScan pH 620
2. CyberScan pH 610
3. CyberScan pH 600
4. CyberScan pH 310
5. CyberScan pH 300
6. CyberScan pH 110
7. CyberScan pH 11
8. Ion 6+
9. pH 6+
10. pH 5+

Bench:

1. Ion 2700
2. pH 2700
3. Ion 700
4. pH 700

“Research can be difficult, but measuring with Eutech products is easy.”



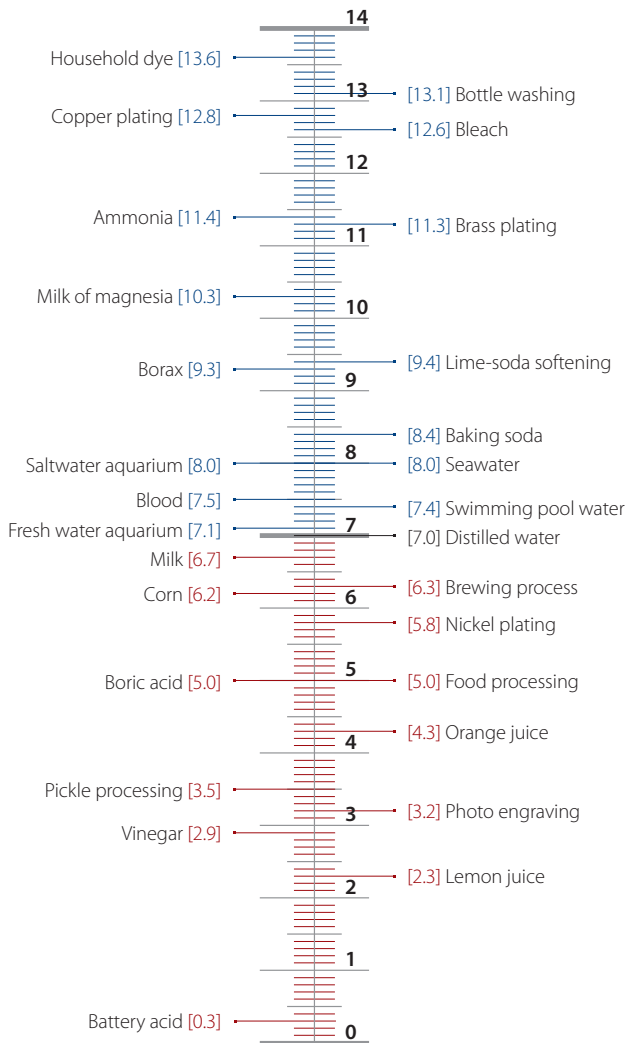
About pH/ORP Measurement

About pH Measurement

Why is pH Important?

pH is one of the most common parameters measured in a wide variety of industries such as water and wastewater treatment, agriculture research and production, environmental monitoring, chemical and life sciences research, electronics production as well as other industrial applications.

Here are examples of pH in a few common industrial and household products:



pH Measurement

pH is always measured across a medium.

Although the litmus paper is one of the most common methods of pH measurement, it can only provide a rough indication which might be insufficient in most applications.

The more accurate method involves the use of a measurement system that consists of a pH meter and a pH electrode that has a hydrogen ion sensitive glass bulb. The most common sensing element used in the electrode is the glass membrane as it is selective for H⁺ ions i.e. H⁺ ions can permeate through the hydrated layer of glass membrane. However the electrode body may not necessarily be glass.

The movement of ions into the hydrated membrane changes the electrochemical effect inside the glass which is measured in mV and then converted via the pH meter to be reflected as a pH value.

Therefore depending on the concentration of ions in the solution, the mV and hence pH varies.

The performance of an electrode is dependent on two parameters – Offset and Slope.

Offset in pH Electrode

Theoretically, when placed in pH 7.00 buffer at 25 °C, a pH electrode produces 0 mV which the pH meter reads as 7.00 pH. The difference between 0 mV and the electrode's actual reading is called the offset error which can be as high as ±25 mV.

In other words, when the electrode is not in measurement or in pH 7 buffer solution, the output (or reading) will be known as the offset.

While in theory, the mV value should be zero, however in practice this is rarely the case because of the following reasons:

- Liquid difference
- Bulb composition
- Wire geometry difference and other factors

In practice, it is unrealistic to achieve zero offset in electrodes. The Eutech range of advanced micro-processor based meters provides offset calibration abilities for consistent and reliable measurements.

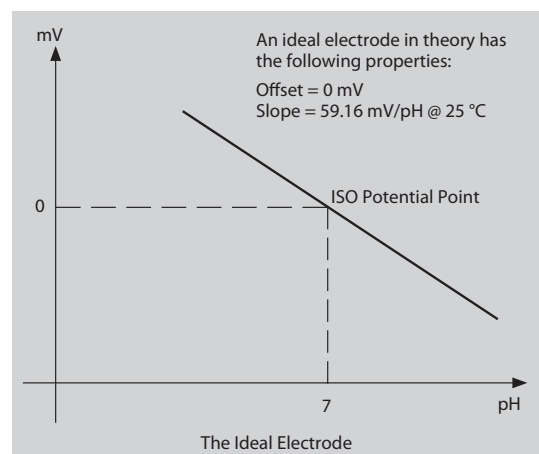
Slope in pH Electrode

A pH electrode produces different mV in different solutions. Therefore, the slope of the electrode can be defined as

Slope = mV/pH unit

A perfect pH electrode, at 25 °C, produces a slope of 59.16 mV per pH unit. For example, an electrode with 0 mV offset should read mV value of 177.48 mV when placed in a pH 4.01 solution. The slope is hence calculated as (177.48 mV - 0 mV) / 3 pH = 59.16 mV/pH. The difference between this perfect slope reading and the electrode's actual reading is called the slope error.

These theoretical values are not always achieved, even with brand new electrodes. The slope of a new pH electrode should fall between 92 % and 102 % of 59.16 mV. If the slope falls below 92 %, cleaning of the electrode may be needed.



Temperature Compensation

In a perfect pH electrode – one that measures zero at exactly pH 7 – there is no temperature effect on the electrode sensitivity at pH 7 regardless of temperature change. Most pH electrodes are not perfect, but the errors from changes in temperature are still very minute when near pH 7, plus or minus one-tenths of a pH, and can be disregarded. However, the further from pH 7 the solution is and the greater the temperature changes, the greater the expected measurement error due to changes in the electrode's sensitivity. For most electrodes, the error is approximately 0.003 pH/°C/pH away from pH 7.

For example, if a pH meter is calibrated at room temperature (25 °C) and is measuring a sample around pH 4 at around 5 °C,

Temperature difference: 25 °C - 5 °C = 20 °C
 pH away from neutral: 7 pH - 4 pH = 3 pH
 Total error: 0.003 x 20 x 3 = 0.18 pH

To overcome this error, pH meters require some form of temperature compensation to ensure standardized pH values. Meters and controllers with Automatic Temperature Compensation (ATC) receive a continuous signal from a temperature sensing element and automatically correct the pH value based on the temperature of the solution. Manual Temperature Compensation requires the user to enter the temperature of the solution in order to correct pH readings for temperature. ATC is considered to be more practical for most pH applications.

Most Eutech meters offer ATC capabilities. Models with this feature include the pHTestr® 10, 20, 30 and all the handheld and bench pH meters.

Single and Double Junction Electrodes

For many applications, a single junction reference electrode is satisfactory. However, if samples contain proteins, sulfides, heavy metals or any other material which interacts with silver ions, unwanted side reactions may occur. These reactions can lead to erroneous reference signals or to precipitation at the reference junction leading to a short service life.

A double junction reference design affords a barrier of protection to combat the above interactions. When in doubt about using single or double junction designs, the safest approach is to use the double junction as they can be used anywhere a single junction design can be used. Conversely, single junction designs should not be used where double junction designs are needed. In most process applications, it is recommended to use double junction electrodes.

Eutech's new range of large screen pocket testers pHTestr® series feature double junction electrodes that extend useful life and provide long term cost savings for users.

Normal Aging

As electrodes are used or stored for long periods they will experience some deterioration in performance. Offsets will change and slope errors will increase. By using the calibration controls these errors can be corrected. If an electrode is able to be calibrated and is stable and responsive, it is still a functional electrode and may be used in service even though it no longer meets "new" electrode specifications.

About ORP Measurement

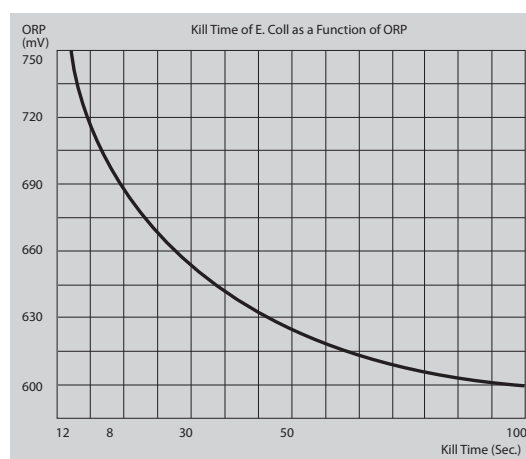
ORP – Oxidation Reduction Potential

Oxidation-Reduction Potential (ORP) or Redox Potential measurements are used to monitor chemical reactions, to quantify ion activity, or to determine the oxidizing or reducing properties of a solution. ORP is a measurement of the electrical potential of a redox reaction and serves as a yardstick to judge how much oxidation or reduction takes place under existing conditions.

ORP electrodes measure the voltage across a circuit formed by the measuring metal half cell and the reference half cell. When the ORP electrode is placed in the presence of oxidizing or reducing agents, electrons are constantly transferred back and forth on its measuring surface, generating a tiny voltage. The ORP measurement can be made using the millivolt mode of a pH meter.

Major areas of usage include the treatment of industrial wastes, study of biological systems, oxidation of cyanide, bleaching of pulp, manufacture of bleach and reduction of chromate wastes.

The measurement of ORP is also useful in pool water treatment as an indication of sanitation in relation to free chlorine parameter. ORP technology has gained recognition worldwide and is found to be a reliable indicator of bacteriological water quality. The table below illustrates the Kill Time of E.Coli bacteria as a function of ORP value. With a value of 600 mV, the life of the bacteria is almost 2 minutes; at 650 mV it reduces to 30 seconds. Above 700 mV the bacteria is killed within a few seconds. It is therefore necessary for the water to have an ORP value of at least 700 mV to ensure good water quality.



ORP value also depends on the pH of pool water. Normal values lie between 7.2 and 7.6 pH with a tendency to increase to around 8.0 to 9.0 pH depending on the level of contamination. The pH of the pool water has to be maintained at the optimum level between 7.2 and 7.6 pH by dosing appropriate chemicals. If the pH of the swimming pool water is acceptable and the ORP value is below 700 mV, hypochlorite or other oxidising chemicals should be added.

Eutech offers a wide range of meters that measure both pH and ORP values in various educational, laboratory and industrial applications. These include ORPTestr® 10 pocket tester, handheld meters CyberScan Series pH 300, pH 310, pH 11 and pH 110, pH 6+.



Large custom dual-display LCD



Ribbed body for better grip



User-replaceable sensor



Comes with protective plastic case and lanyard

pH measurement has never been easier with the pHTestr® series. Accurate, handy and user-friendly, the pHTestr 30, pHTestr 20 and pHTestr 10 are best pocket testers in their class.



Applications

General: Quick and accurate checks in pools and spas, aquariums and hydroponics operations, or wherever frequent pH testing is required.

Industrial: Cooling towers, food processing, water and wastewater treatment, photo-development, printing and chemical industries.

Educational: Useful for most laboratory, ecological studies and other applications.

High Accuracy

- Up to ±0.01 pH accuracy at 0.01 pH resolution
- 3-point push-button calibration with USA and NIST buffer option sets – quick, easy calibration with no mistakes
- Automatic Temperature Compensation (ATC) for accurate readings even in varying conditions

Long Lasting

- Double-junction sensor with chemical resistant Kynar® porous junction minimizes clogging and contamination
- Longer electrode lifespan with increased polymer gel volume
- Rugged and waterproof to IP67 standards. So light, it floats!

User-Friendly

- Large custom dual display LCD
- Calibration settings remain, even when tester runs out of batteries



EcoTestr pH 2

pH

Economical pH measurement is a breeze with the EcoTestr pH 2. Designed for fuss-free measurements on the go, the pH 2 is ideal for quick pH measurements in hydroponic gardening, aquaculture, agriculture, pools, simple lab work and other water/wastewater applications.



Automatic pH calibration feature – switch tester to calibration mode, immerse sensor in pH buffer solution and leave tester to do the rest

Automatic temperature compensation adjust readings according to temperature change automatically for greater accuracy



Pocket clip secures tester firmly to your belt or pocket



Durable keypad



IP67 waterproof – lightweight tester floats on water for easy retrieval



Transparent protective cap doubles up as a container for sensor conditioning or on-site calibration

- ± 1 % accuracy
- Quick, easy calibrations at the press of a button with auto-buffer recognition and auto-calibration functions
- Up to three calibration points for broadened accuracy throughout the pH range



Applications

Water and wastewater treatment
• Environmental monitoring • Education
• Hydroponics • Agriculture • Aquaculture and aquariums • Pools and spas • Food and beverage manufacturing • Cooling towers
• Electroplating • Printing • Photo-development and more!

pH/ORP/Ion

The versatile pHTestr 10BNC comes with a BNC electrode connection, allowing the tester to be used with a wide range of specialty electrodes with various cable lengths – especially useful in inaccessible areas such as cooling towers or large drums used in yoghurt production.

Applications

General: Quick and accurate checks in pools and spas, aquariums and hydroponics operations, or wherever frequent pH testing is required.

Industrial: Cooling towers, food processing, water and wastewater treatment, photo-development, printing and chemical industries.

Educational: Useful for most laboratory, ecological studies and other applications.

- User-selectable electrodes with BNC connectors
- Up to ±0.01 pH accuracy at 0.01 pH resolution
- Non-volatile memory holds your tester settings, even when batteries run out
- 3-point push-button calibration with USA and NIST buffer option sets – quick, easy calibrations with no mistake
- Advance power management – 500 hours of operation on one set of batteries
- Large custom dual-display LCD
- Waterproof to IP67 standard. So light, it floats!



Light-weight tester floats for easy retrieval



BNC connector enables testing with a wide range of specialty electrodes with BNC connectors



Meat



Cheese

pH Spear
pH/°C/°F

Specially designed for food applications, the Eutech pH Spear is equipped with a tough spear tip open pore sensor, and allows direct pH measurement of solid or semi-solid samples like cheese, fruits, meat and wet soil.

Large custom dual-display



Open pore reference junction minimises clogging and delivers fast, stable measurements

Tough open pore spear tip

Double-junction sensor prevents contamination of sample

- Open pore spear tip sensor with MTC – tough, fast, stable and minimal clogging
- Double junction sensor prolongs electrode lifespan without contaminating samples
- Up to ±0.01 pH accuracy at 0.01 pH resolution
- Non-volatile memory holds your tester settings, even when you run out of batteries
- 3-point push-button calibration with 5 buffer option sets – quick, easy calibrations with no mistake
- Advance power management – 500 hours of operation on one set of batteries
- Waterproof to IP67 standard



Applications

- Bread • Meat • Cheese • Salami • Ice-cream
- Poultry • Fruits • Other dairy products • Soil
- Other similar samples

ORPTestr® 10 ; ORPTestr® 10BNC

ORP

ORP



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pH/ORP/Ion
Pocket Tester

Fast, stable and precise – the ORPTestr 10 is designed with advanced microprocessor technology to give you up to ± 2 mV accuracy across a wide measuring range. User-replaceable double-junction sensor with a wide platinum band provides highly accurate results, even in wet and rugged environments.



Large surface area platinum band provides quick, stable, repeatable results

Valox® strong plastic casing offers superior chemical resistance



ORPTestr 10BNC enables a wider range of specialty electrodes to be used

(Refer to page 98 for our ORP electrode selection)

More Accurate

- ± 2 mV full scale accuracy
- Wide range of -999 to 1000 mV

More Savings

- Replaceable double-junction Ag/AgCl polymer sensor
- Advance power management – 500 hours of operation on one set of batteries

More User-Friendly









- Large custom display LCD
- Non-volatile memory stores your tester settings, even when you run out of batteries
- Waterproof to IP67 standard. So light, it floats!

Applications

- Chromate reduction • Cyanide oxidation
- Swimming pool water • Pulp bleaching
- Cooling towers • Aquaculture • Drinking water • Other redox applications



**pH/ORP
Pocket Testers
Specifications**

Models	pHTestr 30	pHTestr 20	pHTestr 10	EcoTestr pH 2	pHTestr 10BNC	pH Spear	ORPTestr 10	ORPTestr 10BNC	
									
Measuring Parameter	pH / °C / °F		pH				ORP		
Highlights	0.01 resolution, temp. display	0.01 resolution	0.1 resolution		BNC connection	Open pore, spear tip	Platinum band sensor	BNC connection	
pH/ORP	Range	-1.00 to 15.00 pH		-1.0 to 15.0 pH	0.0 to 14.0 pH		-1.00 to 15.00 pH		
	Resolution	0.01 pH		0.1 pH		0.01 pH		1 mV	
	Accuracy	±0.01 pH		±0.1 pH		±0.01 pH		±2 mV	
	Cal. Points	3 auto						1 manual	
Buffer Sets	USA: 4.01 / 7.00 / 10.01 ; NIST: 4.01 / 6.86 / 9.18							-	
Temperature	Range	0 to 50.0 °C / 32.0 to 122.0 °F	-		0 to 50.0 °C / 32.0 to 122.0 °F		-		
	Resolution	0.1 °C / 0.1 °F	-		0.1 °C / 0.1 °F		-		
	Accuracy	±0.5 °C / 0.9 °F				-			
	Calibration Window	±5 °C / 9 °F from default value	-		0 to 50.0 °C / 32.0 to 122.0 °F		-		
Meter Features	Temperature Compensation	ATC			MTC		-		
	Sensor Type	Double-junction		Single-junction		BNC	Double-junction		
	Sensor Included	Yes			-		Yes		
	Replacement Sensors	1		-		Many	1		
	Non-Volatile Memory	Yes							
	Auto-Off	8.5 mins after last key pressed							
	Operating Temperature	0 to 50 °C							
	LCD Display	Dual-display LCD (2.1 x 2.7 cm)			Single-display LCD (1.7 x 0.7 cm)		Dual-display LCD (2.1 x 2.7 cm)		
	Power	4 x 1.5 V 'A76' micro alkaline batteries (included)							
	Dimensions (LxWxH); Weight	Tester	16.5 x 3.8 cm ; 90 g		16.3 x 4.5 x 3 cm ; 90 g		16.5 x 3.8 cm ; 90 g		24 x 3.8 cm ; 103 g
Boxed		18.5 x 6.5 x 5 cm ; 200 g		24.5 x 13.5 x 4.5 cm ; 137 g		18.5 x 6.5 x 5 cm ; 200 g		28 x 7 x 7 cm ; 180 g	



pH/ORP Pocket Testers

Item	Order Code	Part No.	Parameters			Sensors				Accessories	
			pH	ORP	Temperature	pH Double Junction Sensor (PHSENSOR03DJ)	pH/ORP BNC Connector Sensor (PHSENSORBNC)	pH Double Junction Spear-Tip Sensor (PHSENSOR04)	ORP Double Junction Sensor (ORPSENSORDJ)	Lanyard	Alkaline Button Cell Batteries
pHTestr 30	PHTEST30	01X366903	•		•	•				•	•
pHTestr 20	PHTEST20	01X366902	•			•				•	•
pHTestr 10	PHTEST10	01X366901	•			•				•	•
EcoTestr pH 2	ECPHTEST2	01X460902	•								•
pHTestr 10BNC	PHTEST10BNC	01X366904	•				•			•	•
pH Spear	PHSPEAR	01X366920	•					•			•
ORPTestr 10	ORPTEST10	01X366909		•					•	•	•
ORPTestr 10BNC	ORPTEST10BNC	01X366916		•			•			•	•

Replacement Sensors/Electrodes & Accessories

Used With	Description	Order Code	Part No.
pHTestr 10 / 20 / 30	Replacement double junction sensor	PHSENSOR03DJ	01X106709
EcoTestr pH 2	pH 4.01 buffer solution, 480 ml bottle	ECBU4BT	01X211201
EcoTestr pH 2	pH 7.00 buffer solution, 480 ml bottle	ECBU7BT	01X211202
EcoTestr pH 2	pH 10.01 buffer solution, 480 ml bottle	ECBU10BT	01X211203
EcoTestr pH 2	Storage solution for pH sensor, 480 ml bottle	ECRE005	01X211206
EcoTestr pH 2	Protein removal solution, 480 ml bottle	ECDPGBT	01X211216
EcoTestr pH 2	pH 4.01 buffer sachets (NIST traceable), box of 20 x 20 ml sachets	ECBU4BS	01X223102
EcoTestr pH 2	pH 7.00 buffer sachets (NIST traceable), box of 20 x 20 ml sachets	ECBU7BS	01X223101
EcoTestr pH 2	pH 10.01 buffer sachets (NIST traceable), box of 20 x 20 ml sachets	ECBU10BS	01X223103
EcoTestr pH 2	pH deionized water rinse sachets, box of 20 x 20 ml sachets	ECRINWT	01X223201
pHTestr 10BNC / ORPTestr 10BNC	Replacement BNC connector sensor	PHSENSORBNC	01X106720
pH Spear	Replacement double junction spear-tip electrode	PHSENSOR04	01X106724
ORPTestr 10	Replacement double junction sensor	ORPSENSORDJ	01X106711
pHTestr 10BNC	General purpose plastic-body single junction gel-filled pH combination electrode, 12 x 90 mm, BNC connector, 1 m cable	ECFC7252101B	01X099412
pHTestr 10BNC	General purpose plastic-body single junction refillable pH combination electrode, 12 x 90 mm, BNC connector, 1 m cable & 10 ml refilling electrolyte	ECFC72521R01B	01X099413
pHTestr 10BNC	General purpose plastic-body double junction gel-filled pH combination electrode, 12 x 90 mm, BNC connector, 1 m cable	ECFC7252201B	01X099417
pHTestr 10BNC	General purpose plastic-body double junction refillable pH combination electrode, 12 x 90 mm, BNC connector, 1 m cable & 10 ml refilling electrolyte	ECFC72522R01B	01X099414
pHTestr 10BNC	Submersible ABS-body gel-filled pH combination electrode; single annular ceramic junction, BNC connector, 3 m cable	ECDA9350603B	93X218879
pHTestr 10BNC	Direct connect epoxy-body gel-filled pH combination electrode, 12 x 90 mm, BNC connector on top of electrode	ECGE7251000B	93X218826
ORPTestr 10BNC	General purpose plastic-body single junction gel-filled ORP electrode, 12 x 90 mm, BNC connector, 1 m cable	ECFC7960101B	01X256612
ORPTestr 10BNC	General purpose plastic-body single junction refillable ORP electrode, 12 x 90 mm, BNC connector, 1 m cable & 10 ml refilling electrolyte	ECFC79601R01B	01X254014
ORPTestr 10BNC	General purpose plastic-body double junction gel-filled ORP electrode, 12 x 90 mm, BNC connector, 1 m cable	ECFC7960201B	01X256613
ORPTestr 10BNC	General purpose plastic-body double junction refillable ORP electrode, 12 x 90 mm, BNC connector, 1 m cable & 10 ml refilling electrolyte	ECFC79602R01B	01X256621
All testrs	Belt-loop soft carrying case for tester	ECPOUCH01	56X201300
All testrs	Alkaline button cell batteries (50 units per pack)	ECBATT14	01X220401

pH/ORP/Ion
CyberScan Waterproof
Handheld

CyberScan pH 620 ; CyberScan pH 610 ; CyberScan pH 600
pH/ORP/Ion/°C/°F pH/ORP/°C/°F pH/ORP/°C/°F

pH/ORP/Ion

Featuring a large, comprehensive screen with simultaneous display of electrode status, calibration information, temperature and pH or ion measurements at 3-digit resolution! The CyberScan pH 600 comes with advanced wireless communication technology – no wires, no cables. Simply send data from meter to PC with the press of a button.



Electrode inputs



Wireless data transfer



Waterproof external power input



Complimentary CyberComm software – download data from meter to PC as text or Excel® spreadsheet



IrDA wireless communication

Comprehensive one-glance-tells-all screen display with backlight

Sturdy rubber boot with hinge doubles up as bench top stand

Applications

- Surface water analysis • Water & wastewater treatment • Boiler blow-down
- Electroplating rinse tanks • Drinking water
- Hydroponics • Printing Industry
- Swimming pools • Others

Higher Resolution & Accuracy

- High accuracies of up to ± 0.002 at resolution expandable to 3-decimal places
- Cal-due alarm prevents out-dated calibrations
- Higher full-range accuracy with up to 6 pH and 8 Ion calibration points
- Electrode diagnostic with properties report and response indicator alerts when electrodes require maintenance

Fuss-Free Data Management

- Non-volatile memory stores up to 500 data sets in GLP-compliant format
- RS232C through LED*, IrDA wireless communications technology
- Complimentary Eutech CyberComm 600 DAS software
- Auto-logging function automatically logs readings at user-set intervals – great for continuous monitoring

More User-Friendly

- Intuitive and self-diagnostic
- 20 buffer options with custom and auto buffer recognition
- High/low set-points function for quality control checks – meter warns when readings fall outside set limit
- Password protection security for calibration and set-up menus

* RS232C (LED) interface adapter available as separate accessory (order code: 01X344201)



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ESIS
Industrial Electronics

CyberScan pH 310 ; CyberScan pH 300

pH/ORP/°C/°F

pH/ORP/°C

CyberScan pH 310 and pH 300 are IP67 waterproof and ergonomically designed for the rigours of field measurements and the demands of laboratory applications.



Rubber sleeve protects connector

Rubber grips for better hold

Attach additional probe holder when required

pH/ORP/Ion
CyberScan Waterproof Handheld



Ergonomic design



Rubber sleeve provides better protection against water seepage



Adjustable probe holder



Available in complete kit version

- Waterproof to IP67 standard
- Additional protection against water seepage with rubber sleeve at connector
- Up to 5-point push button calibration
- Selectable automatic/manual temperature compensation
- Dual-display shows pH & temperature readings simultaneously
- Other features include: Custom dual-display LCD, user-customisation on advanced setup mode, auto-off, HOLD function, self-diagnostics, electrode status display

Expanded Features of CyberScan pH 310

- GLP-compliant date/time stamping
- Up to 6-point push button calibration with DIN buffer set
- Selectable °C/°F
- Extended memory – 50 data sets
- Auto-hold function



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ESIS
Industrial Electronics

Applications

Industrial: Ideal for checks in water conditioning plants, cooling towers, plating and finishing operations, food processing water testing (e.g. HACCP compliance), printing, chemical, manufacturing and water/wastewater treatment.

Educational: Useful for most laboratory, ecological studies and other applications.

Laboratory: Use in all types of food processing, environmental studies, chemical labs, titrations and quality assurance testing, where GLP data-management is required.

pH/ORP/Ion



Complimentary
CyberComm Data
Acquisition software*
*CyberScan pH 110 only



RS232C output to printer
or computer with DAS*
*CyberScan pH 110 only



Available in
complete kit version



pH 11



Dual-display
with temperature
annunciator

Ergonomically
designed for
easy one-hand
operation

Splashproof
tactile
keypad

IP54-rated housing
protects meter
against accidental
water splashes

pH 110

User-friendly with advanced features, the CyberScan pH 110 and 11 are self-diagnostic and designed to fit your palm perfectly for effortless one-hand operation.

- Up to 5-point push-button calibration and auto-buffer recognition for quick, easy calibration with minimal mistakes
- Selectable automatic/manual temperature compensation
- Hold function freezes readings for easy reference
- Auto-off conserves energy and lengthens battery life-span
- Easy troubleshooting with comprehensive self-diagnostic messages

Applications

- Food processing • Water & wastewater treatment • Cooling towers • Printing
- Ponds & aquariums • Agriculture & hydroponics • Education institutions
- Electroplating operations (use with ORP electrode)

Expanded Features of CyberScan pH 110

- Selectable °C/°F
- Up to 6-point push-button calibration with DIN buffer set
- Direct data transfer via RS232C output – auto data-logging to PC with CyberComm DAS
- Expanded memory stores up to 100 data sets



Ion 6+ ; pH 6+ ; pH 5+
 Ion/pH/ORP/°C pH/ORP/°C pH/°C

The new Eutech Ion 6+, pH 6+ and pH 5+ offer you the greatest value-for-money for basic pH and ion measurement needs. Rugged and user-friendly, these no-frill meters come with protective rubber boots and convenient benchtop stands – great for both the lab and the field.



Ion 6+



Reader-friendly screen display



Protective rubber boot



Available in complete kit version

- Up to 3 calibration points with auto-buffer recognition and choice of USA, NIST and pure water buffer option sets – quick, easy calibration with no mistakes
- Accuracy of up to ± 0.01 pH and ± 0.5 °C
- Automatic Temperature Compensation (ATC)
- Non-volatile memory holds your settings, even when meter runs out of batteries
- Hold function freezes readings for easy reference
- Auto-off conserves energy and lengthens battery life-span
- Easy troubleshooting with comprehensive self-diagnostic messages













Applications

General: Ideal for checks in pools and spas, aquariums and hydroponics operations, or anywhere water quality is a concern.

Industrial: Cooling towers, food processing, water and wastewater treatment, photo-development, printing and chemical industries.

Educational: Useful for most laboratory, ecological studies and other applications.

**pH/ORP
Handheld Meters
Specifications**

Models	CyberScan Dual-Display						Eutech Single-Display				
	pH 620	pH 610	pH 600	pH 310	pH 300	pH 110	pH 11	Ion 6+	pH 6+	pH 5+	
											
Measuring Parameter	pH / ORP / Ion / °C / °F	pH / ORP / °C / °F			pH / ORP / °C	pH / ORP / °C / °F	pH / ORP / °C	Ion / pH / ORP / °C	pH / ORP / °C	pH / °C	
Highlights	Waterproof, GLP, RS232C, IrDA, Ion, 0.001 pH	Waterproof, GLP, RS232C, IrDA, 0.001 pH	Waterproof, GLP, RS232C, IrDA, 0.01 pH	Waterproof, GLP	Waterproof handheld	Expanded memory, RS232C output	Standard handheld	Economical Ion, pH, ORP measurement	Economical pH, ORP measurement	Economical pH measurement	
pH	Range	-2.000 to 20.000 pH		-2.00 to 20.00 pH		-2.00 to 16.00 pH		0.00 to 14.00 pH			
	Resolution	0.1 / 0.01 / 0.001 pH		0.1 / 0.01 pH		0.01 pH		±0.01 pH			
	Accuracy	±0.002 pH		±0.01 pH							
	Cal. Points	1 (Offset) to 6-points			Up to 6 (using DIN)	Up to 5	Up to 6 (using DIN)	Up to 5	Up to 3		
Buffer Sets	USA, NIST, DIN, PWB, Custom			USA, NIST, DIN	USA	USA, NIST, DIN, PWB	USA, NIST	USA, NIST, PWB			
ORP	Range	±2000.0 mV			±1999 mV			±500 mV	±1000 mV	-	
	Rel. mV Range	±2000.0 mV			±1999 mV			-	±500 mV	±1000 mV	
	Resolution	0.1 mV			0.1 mV (±199.9 mV) / 1 mV (beyond)						
	Accuracy	±0.2 mV + 1 LSD			±0.2 mV / ±2 mV + 1 LSD						
Ion	Range	0.001 to 19900	-			-		0.01 to 0.99 / 1.0 to 199.9 / 200 to 1999 ppm	-		
	Resolution	2 or 3 digits	-			-		0.01 / 0.1 / 1 ppm	-		
	Accuracy	0.5 % full scale (monovalent) 1 % full scale (divalent)	-			-		±1 % full scale	-		
	Cal. Points	Up to 8	-			-		Up to 3	-		
Temperature	Range	-10 to 110 °C / 14 to 230 °F			-10 to 110 °C	-10 to 110 °C / 14 to 230 °F		0.0 to 100.0 °C			
	Resolution	0.1 °C / 0.1 °F			0.1 °C	0.1 °C / 0.1 °F		0.1 °C			
	Accuracy	±0.5 °C / ±0.9 °F			±0.5 °C	±0.5 °C / ±0.9 °F		±0.5 °C			
Meter Features	Temperature Compensation	ATC / MTC (0 to 100 °C)									
	GLP	Yes			-						
	Cal-Due Alarm	Yes			-						
	Slope/Offset Display	Yes			-						
	IP67	Yes			-						
	Datalogging	Yes			-						
	Memory	500 data sets			50 data sets	16 data sets	100 data sets	50 data sets	-		
	Operating Temperature	0 to 50 °C									
	Average/Stability	Yes									
	LCD Display	Dot-matrix LCD with backlight (5.4 x 7.1 cm)			Dual-display LCD (5.8 x 3.3 cm)			Single-display LCD (4.5 x 2.3 cm)			
	Auto-Off	2 to 30 mins after last key pressed			20 mins after last key pressed						
	Input	DC phono sockets, 8-pin connector, BNC			6-pin connector, BNC		DC socket, BNC, 2.5 mm phono socket		BNC, 2.5 mm phono socket		
	Output	IrDA, RS232C (via LED) *			-		RS232C		-		
	Power	4 x 1.5 V 'AA' alkaline batteries or 9 V DC adapter, 500 mA			4 x 1.5 V 'AAA' alkaline batteries		4 x 1.5 V 'AAA' alkaline batteries or 9 V DC adapter, 200 mA		4 x 1.5 V 'AAA' alkaline batteries		
Battery Life	> 500 hrs			> 200 hrs		> 700 hrs		> 500 hrs			
Dimensions (LxWxH); Weight	Meter	18.3 x 9.5 x 5.7 cm ; 460 g			19 x 10 x 6 cm ; 320 g		18 x 9 x 4 cm ; 220 g		15.7 x 8.5 x 4.2 cm ; 255 g		
	Boxed	40 x 33 x 10 cm ; 2680 g			40 x 33 x 10 cm ; 2100 g						36 x 28 x 8 cm ; 1555 g

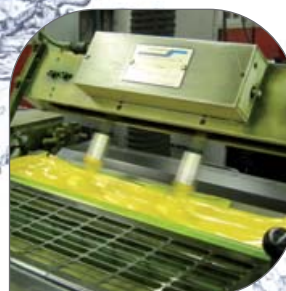
* RS232C (LED) interface adapter available as separate accessory (see page 27 for order information)

pH/ORP Handheld Meters

Item	Order Code	Part No.	Parameters				Electrodes							Accessories						
			pH	ORP	Ion	Temperature	*3-in-1" pH/Temp Combi Electrode (ECFC7352901B)	Double Junction pH Electrode (ECFC7252203B)	Double Junction pH Electrode (ECFC7252201B)	Single Junction pH Electrode (ECFC7252101B)	ATC Probe (PHWPTEM03J)	ATC Probe (PHWPTEM01W)	ATC Probe (PH5TEM01P)	CyberComm 600 DAS Software	CyberComm Portable DAS Software	Electrode Holder (X2)	RS232C Cable	Power Adapter	CyberScan Carry Kit Set With Calibration Stds	Economy Carry Kit Set With Calibration Stds
pH 620	ECPHWP62042K	01X415107	•	•	•	•		•				•			•			•	•	
pH 610	ECPHWP61042K	01X415106	•	•	•	•		•				•			•			•	•	
pH 600	ECPHWP60042K	01X415105	•	•	•	•		•				•			•			•	•	
pH 310	ECPHWP31002K	01X245304	•	•		•			•				•						•	
pH 300	ECPHWP30002K	01X245205	•	•		•			•				•						•	
pH 110	ECPH11002K	01X361203	•	•		•			•				•	•	•			•	•	
pH 11	ECPH1102K	01X361103	•	•		•			•				•		•			•	•	
Ion 6+	ECION602PLUSK	01X256410	•	•	•	•				•				•						•
Ion 6+	ECION601PLUS	01X256409	•	•	•	•								•						•
pH 6+	ECPH603PLUSK	01X245027	•	•		•	•							•						•
pH 6+	ECPH602PLUSK	01X245026	•	•		•			•					•						•
pH 6+	ECPH601PLUSK	01X245028	•	•		•			•					•						•
pH 6+	ECPH601PLUS	01X245025	•	•		•			•					•						•
pH 5+	ECPH503PLUSK	01X244913	•			•								•						•
pH 5+	ECPH502PLUSK	01X244912	•			•			•					•						•
pH 5+	ECPH501PLUS	01X244911	•			•			•					•						•

Replacement Electrodes & Accessories

Used With	Description	Order Code	Part No.
pH 620 / pH 610 / pH 600	ATC probe, 3 m cable	PHWPTEM03J	01X021820
pH 620 / pH 610 / pH 600	ATC probe, 1 m cable	PHWPTEM01J	01X021818
pH 620 / pH 610 / pH 600	General purpose plastic-body double junction gel-filled pH combination electrode, 12 x 90 mm, BNC connector, 3 m cable	ECFC7252203B	01X417010
pH 310 / pH 300	ATC probe, 1 m cable	PHWPTEM01W	01X021807
pH 310 / pH 300 / pH 110 / pH 11	General purpose plastic-body double junction gel-filled pH combination electrode, 12 x 90 mm, BNC connector, 1 m cable	ECFC7252201B	01X099417
pH 110 / pH 11 / Ion 6+ / pH 6+ / pH 5+	ATC probe, 1 m cable	PH5TEM01P	01X021804
Ion 6+ / pH 6+ / pH 5+	General purpose plastic-body single junction gel-filled pH combination electrode, 12 x 90 mm, BNC connector, 1 m cable	ECFC7252101B	01X099412
pH 6+ / pH 5+	General purpose plastic-body *3-in-1" pH/Temperature combination electrode, 12 x 110 mm, BNC connector, 1 m cable	ECFC7352901B	01X218964
pH 620 / pH 610 / pH 600	CyberScan pH 600 series carry kit set – plastic carry case, buffer solutions (pH 4.01, pH 7.00), storage solution, deionised (rinse) water	ECPHWP600KIT	01X430201
pH 620 / pH 610 / pH 600	100 / 240 VAC SMPS power adapter, 9 V, 6 W, centre +ve, US / UK / EUR / Japan plug	01X030132	01X030132
pH 620 / pH 610 / pH 600	RS232C (LED) interface adapter	91100-85	01X344202
pH 310 / pH 300 / pH 110 / pH 11	CyberScan pH carry kit set – plastic carry case, buffer solutions (pH 4.01, pH 7.00), storage solution, deionised (rinse) water	ECPHWPKIT	01X266801
pH 110 / pH 11	100 / 240 VAC SMPS power adapter, 9 V, 6 W, centre +ve, US / UK / EUR / Japan plug	60X030130	60X030130
pH 110 / pH 11	220 / 230 VAC power adapter (50 / 60 Hz) 2-round pin EUR type, 9 VDC 500 mA	60X030112	60X030112
pH 110 / pH 11	110 / 120 VAC power adapter (50 / 60 Hz) 2-flat pin US type, 9 VDC 500 mA	60X030111	60X030111
pH 110	RS232C communication cable – 9-pin male to 9-pin female connector, 1 m cable	ECCA02M09F09	30X219503
Ion 6+ / pH 6+ / pH 5+	Economy pH carry kit set – plastic carry case, buffer solutions (pH 4.01, pH 7.00), storage solution, deionised (rinse) water	ECECOPHKIT	01X266901
Ion 6+ / pH 6+ / pH 5+	Economy neutral carry kit set – plastic carry case, 4 empty sample bottles (60 ml)	ECECODRYKIT	01X266903
All except 600 series	CyberScan handheld carry pouch	ECPOUCH02	56X201400
12 mm diameter electrode	Electrode holder	15X000700	15X000700



>> Printing Industries

>> Ecological Studies



Stability display – faded out and then turns completely black when stable



Bright backlight/illuminated display



Non-skid foot pads



Download the latest software from our website

Intuitive, self-diagnostic and flexible with advanced set-up options for user-customization, the Eutech Ion 2700 series comes with a large, one-glance-sees-all screen. View pH, Ion or Redox reading together with temperature, electrode status, calibration points, date and time all at once!



Integrated electrode holder

RS232 output

Alarm

Oversize informative display

Splashproof housing and keypad

Applications

Educational: Useful for most laboratory, ecological studies and other applications.

Laboratory: Environmental studies, chemical labs, titrations and quality assurance testing, where GLP data-management is required. Use in all types of food processing.

- Up to 6-point push button calibration with auto-buffer recognition
- Direct/indirect potentiometry options
- Quick, easy electrode diagnosis with pH slope and offset display
- Non-volatile memory holds up to 500 data points – time and date-stamped for GLP compliance
- Bi-directional RS232 for easy data transfer to computer
- Cal-due alarm – no more out-dated calibrations!
- Auto-logging function for convenient continuous monitoring
- Limit alarm alerts when reading falls out of range
- Password protection for setup and calibration

Use with any BNC ion electrode – sold separately

Electrode arm and bracket available as separate accessory (order code: 01X321801) – please refer to page 106



pH 2700
pH/ORP/°C/°F

Oversize screen with large fonts yet compact – the new Eutech pH 2700 offers an easy to read screen that says more! View pH or ORP readings, with temperature, electrode status, calibration points, date and time all at once!



Visual stability display eliminates guesswork



Bright backlight/illuminated display



Integrated electrode holder – can be used on either side



Download the latest software from our website

- Up to 6-point calibration with auto-buffer recognition
- Quick, easy electrode diagnosis with multiple pH slopes and offset display
- Non-volatile memory holds up to 500 data points – time and date-stamped for GLP compliance
- Comprehensive self-diagnostic messages that makes troubleshooting a breeze
- Cal-due alarm – no more out-dated calibrations!
- Auto-logging function for convenient continuous monitoring
- Password protection for setup and calibration

Electrode arm and bracket available as separate accessory (order code: 01X321801) – please refer to page 106



Applications

Educational: Useful for most laboratory, ecological studies and other applications.

Laboratory: Environmental studies, chemical labs, titrations and quality assurance testing, where GLP data-management is required. Use in all types of food processing.

Ion-selective electrode measurement has never been this easy – or economical! The Ion 700 measures and records up to 100 pH, Ion and/or ORP data points at up to 2 decimal point resolution.



Oversize display
– easy to read



Non-skid foot pads



Splashproof keypad



Quick reference guide



Integrated
electrode holder

Measures pH or
Ion concentration
with Temperature

Electrode
slope and
offset

Fast response

Applications

Educational: Useful for most laboratory, ecological studies and other applications.

Laboratory: Environmental studies, chemical labs, titrations and quality assurance testing. Use in all types of food processing.

- Large, comprehensive screen that displays readings, calibration points and electrode indicator
- Ready indicator alerts when readings are stable
- Up to 5-point calibration with auto-buffer recognition
- Non-volatile memory holds up to 100 data points
- Integral electrode holder

Use with any BNC ion selective electrode – sold separately
Electrode arm and bracket available as separate accessory (order code: 01X321801) – please refer to page 106

pH 700
pH/ORP/°C/°F

Economical, user-friendly and accurate, the Eutech pH 700 is your ideal choice for routine applications in laboratories, production plants and schools.



Integrated electrode holder – can be used on either side



Splashproof housing; easy to operate keypad



Quick reference guide

- Large, comprehensive screen that displays readings, calibration points and electrode indicator
- Ready indicator alerts when readings are stable
- Up to 5-point push button calibration with auto-buffer recognition
- Non-volatile memory holds up to 100 data points
- Integral electrode holder

Electrode arm and bracket available as separate accessory (order code: 01X321801) – please refer to page 106







Applications

Educational: Useful for most laboratory, ecological studies and other applications.

Laboratory: Environmental studies, chemical labs, titrations and quality assurance testing. Use in all types of food processing.

**pH/ORP
Bench Meters
Specifications**

Models	Deluxe Bench		Economy Bench	
	Ion 2700	pH 2700	Ion 700	pH 700
				
Measuring Parameter	pH / Ion / ORP / °C / °F		pH / Ion / ORP / °C / °F	
Highlights	Graphic LCD with backlight & extensive display		Large LCD with dual display	
pH	Range	-2.000 to 20.000 pH		-2.00 to 16.00 pH
	Resolution	0.1 / 0.01 / 0.001 pH		0.01 pH
	Accuracy	±0.002 pH + 1 LSD		±0.01 pH
	Cal. Points	Up to 6		Up to 5
	Buffer Sets	USA, NIST, DIN, User 1, User 2, Custom		USA, NIST
ORP	Range	±2000.0 mV		±2000 mV
	Rel. mV Range	±2000.0 mV		±2000 mV
	Resolution	0.1 mV		0.1 mV (±199.9 mV) / 1 mV (beyond)
Ion	Concentration	0.001 to 19999 ppm (±2000 mV)	–	0.01 to 2000 ppm (±2000 mV)
	Resolution	2 / 3 digits	–	0.01 / 0.1 / 1 ppm
	Accuracy	0.5 % full scale (monovalent) 1 % full scale (divalent)	–	±0.5 % full scale (monovalent) ±1 % full scale (divalent)
	Cal. Points	2 to 8	–	2 to 5
Temperature	Range (Meter)	0.0 to 100.0 °C / 32.0 to 212.0 °F		
	Resolution	0.1 °C / 0.1 °F		
	Accuracy	±0.3 °C / ±0.5 °F (0 to 70 °C)		
	Compensation	ATC / MTC (0 to 100 °C) (pH only)		
Meter Features	GLP	Yes		–
	Slope/Offset	–		Yes
	Datalogging	Yes		–
	Memory	500 data sets		100 data sets
	LCD Display	Graphic LCD with backlight (5.9 x 7.8 cm)		Custom dual-display LCD (5.6 x 7.5 cm)
	Input	DC socket, BNC, 2.5 mm phono (ATC), phono (reference), phono (RS232)		DC socket, BNC, 2.5 mm phono (ATC), phono (reference)
	Output	RS232C		–
Dimensions (LxWxH); Weight	Meter	17.5 x 15.5 x 6.9 cm ; 650 g		
	Boxed	30.8 x 23.5 x 12.4 cm ; 1800 g		

pH/ORP Bench Meters

Item	Order Code	Part No.	Parameters				Electrodes				Accessories				
			pH	ORP	Ion	Temperature	pH Electrode (EC620131)	pH Electrode (ECF7252101B)	pH Electrode (ECF7370101B)	ATC Probe (PH5TEMB01P)	Integral Electrode Holder	Power Adapter	RS-232 Cable (30X427301)	pH Electrode Refill Solution, 60 ml	pH Sachets
Ion 2700	ECION270042GS	01X543904	•	•	•	•					•	•	•	•	•
Ion 2700	ECION270040S	01X543903	•		•	•					•	•	•		•
pH 2700	ECPH270042GS	01X543902	•	•		•		•	•		•	•	•	•	•
pH 2700	ECPH270040S	01X543901	•	•		•					•	•	•		•
Ion 700	ECION70040S	01X541609	•		•	•					•	•	•		•
pH 700	ECPH70042S	01X541605	•	•		•	•				•	•	•		•
pH 700	ECPH70042GS	01X541610	•	•		•					•	•	•		•
pH 700	ECPH70040S	01X541603	•	•		•					•	•	•		•

Replacement Electrodes & Accessories

Used With	Description	Order Code	Part No.
pH 2700	Glass-body double junction Ag/AgCl refillable pH electrode, 12 x 110 mm, BNC connector, 1 m cable	ECFG7370101B	93X218819
pH 700	General purpose plastic-body single junction gel-filled pH combination electrode, 12 x 90 mm, BNC connector, 1 m cable	ECFC7252101B	01X099412
pH 2700 / pH 700	ATC probe	PH5TEMB01P	01X210303
pH 2700 / Ion 2700	RS232 to USB cable – use with 30X427301 cable to connect 2700 to USB port of PC	30X544601	30X544601
pH 2700 / Ion 2700	100 / 240 VAC SMPS power adapter, 9 V, 6 W	60X426401	60X426401
pH 700 / Ion 700	100 / 240 VAC SMPS power adapter, 9 V, 6 W	60X030130	60X030130
pH 2700 / Ion 2700	ECFG7370101B pH electrode refill solution, reference, saturated potassium chloride, 60 ml	01X211297	01X211297
All meters	Electrode arm and bracket	01X321801	01X321801