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# CyberScan

**Series 1500 Bench Meters**



• pH • Conductivity • Dissolved Oxygen



# Taking the science of precise measurements to a new level

## Key Features of Cyber

### Extra-Large Custom LCD with Wealth of Information

Move away from having to squint at small displays. With the largest liquid crystal display in its class, the CyberScan Series 1500 gives you a comprehensive yet uncluttered view of measured readings (screen size: 73 X 106 mm).

Scratch-resistant display screen offers durability while ensuring readability. Large specially angled characters enable a clear view from wide viewing angles.

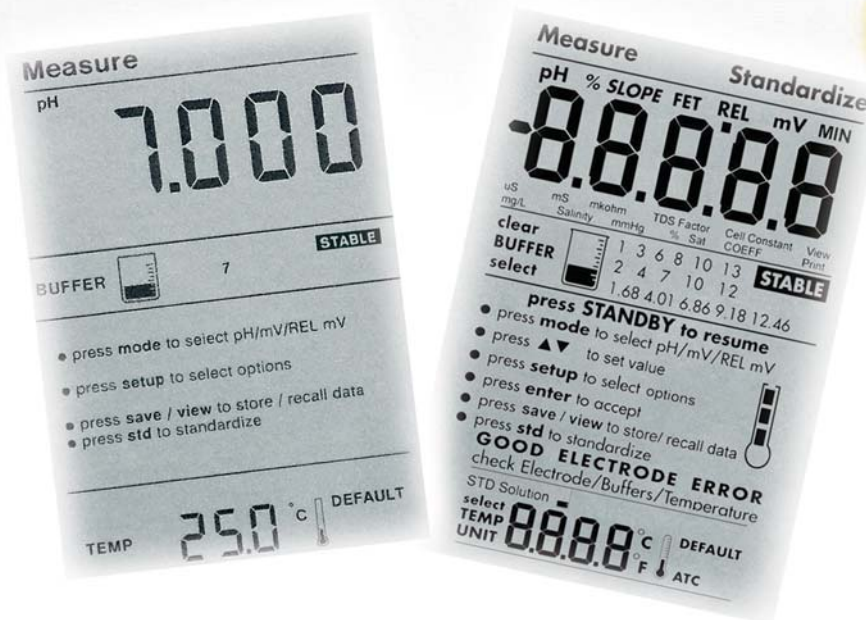
A wealth of information is instantly available right at your finger tips - from basic measured readings to advanced last calibration values. Meter also provides simple language prompts to facilitate smooth operation.

### Unprecedented Resolution & Accuracy

Select up to three-digit resolution and accuracy depending on the preciseness of measurements.

### Large Non-volatile Memory

Large memory enables you to download up to 100 measured data sets via the RS232C port provided on all meters. Being non volatile, the memory also ensures data is not lost when meter is powered off. So last calibration values, stored data and meter settings are retained indefinitely.



*Designed with a larger display for enhanced readability, CyberScan Series 1500 is a clear departure from conventional meters. Taking precise measurements in a laboratory setting is now a breeze with these user-friendly meters. While allowing easy customisation to suit your specific needs, Series 1500 meters deliver consistently optimum performance over a wide range of applications. Compact, highly reliable and accurate these research-grade meters are indeed a must-have instrument for your laboratory.*



## CyberScan Series 1500

### Self-Diagnosis

Powered by advanced software, the meter comes with self-diagnostic capabilities. For example, electrode indicator sign alerts you to electrode condition as you perform measurements. Similarly, a stability indicator lets you know when readings are steady enough for recording.

### Customised Functions

Advanced meter set-up options give you the flexibility to configure the meter according to the exact level of performance you need. Data input is via a soft touch keypad which is ergonomically laid out for greater convenience.



### Seamless interfacing with Computer

With a built-in, bi-directional RS232 interface, CyberScan Series 1500 meters provide seamless interfacing with a computer. Using a Windows-based data acquisition software, all the data can be captured and printed from the convenience of sitting in front of a computer terminal.



### Ergonomic and Rugged Design

Exquisite, sleek meter design augments this high-performance instrument. Integral electrode holder (mountable on either side of the meter) organises multiple electrodes neatly, saving valuable bench space for your other tasks. Minimal maintenance is required as the rugged front panel is splash-proof.

# CyberScan pH 1500

A must-have for every laboratory

- Measures pH, mV (ORP) and relative mV with user-selectable 0.001/0.01/0.1 pH or 0.1 mV resolution and delivers  $\pm 0.002$  pH /  $\pm 0.2$  mV accuracy.
- Multi-point calibration (up to 6 pH buffers) with USA, NIST and Euro buffer set values (total 16 different buffers).
- Auto-buffer recognition minimises calibration inaccuracy.
- Displays electrode diagnosis like slope/offset and graphical icon of electrode condition after successful calibration.
- Accepts standard glass pH combination, half-cell or non-glass solid-state FET pH electrode directly (without adapter).
- Automatically corrects for temperature fluctuations with ATC probe.



## Meter Specifications

pH range	-1.999 to +19.999 pH
Resolution	0.1/0.01/0.001 pH
Accuracy	$\pm 0.1/0.01/0.002$ pH
mV/Absolute mV range	-1800.0 to +1800.0 mV
Resolution	0.1 mV
Accuracy	$\pm 0.2$ mV
Temperature range	-5.0 to 105.0 °C (23.0 to 221.0 °F)
Resolution	0.1 °C (0.1 °F)
Accuracy	$\pm 0.3$ °C ( $\pm 0.5$ °F)
pH Buffer Sets	USA (pH 2, 4, 7, 10, 12) NIST (pH 1.68, 4.01, 6.86, 9.18, 12.46) DIN (pH 1, 3, 6, 8, 10, 12)
pH Calibration Points	1 to 6 points
Memory	100 data sets
Display	105 x 75 mm (screen size) custom LCD with contrasted background
Memory	100 data sets
Operating Temperature	0 to 50 °C
Power Requirement	110VAC/220VAC, centre negative
Inputs & output	BNC, power socket, socket pin (reference), DIN (FET pH) & bi-directional RS232
Dimension/weight	23 x 18 x 6 cm; 950g / 40 x 26 x 9 cm; 1.6kg



## Ordering Information

Order Code	Description
EC-PH1500/11S	CyberScan pH 1500 meter with temperature probe (EC-620-19), integral electrode stand and 110VAC adapter (pH electrode to be ordered separately)
EC-PH1500/21S	CyberScan pH 1500 meter with temperature probe (EC-620-19), integral electrode stand and 220VAC adapter (pH electrode to be ordered separately)

Please refer to electrode section for choice of electrodes.

# CyberScan CON 1500

For virtually all water applications

- Measures Conductivity, Resistivity and Total Dissolved Solids (TDS) with  $\pm 0.5\%$  accuracy.
- Automatic single or multi-point calibration with preset standard conductivity values at  $84 \mu\text{S}/\text{cm}$ ,  $1413 \mu\text{S}/\text{cm}$ ,  $12.88 \text{ mS}/\text{cm}$ ,  $111.8 \text{ mS}/\text{cm}$  or manual multi-point calibration (up to 4 points) for greater flexibility.
- Auto-ranging capability toggles to appropriate measurement range quickly, eliminating guesswork.
- Accepts 2-cell or 4-cell conductivity electrodes.
- Automatically corrects for temperature fluctuations with ATC probe.
- Built-in replatinising circuit allows electrode maintenance.
- Adjustable temperature coefficient, normalisation temperature, TDS factor and cell constant allows user customisation for more accurate measurement.
- Includes a 4-cell conductivity electrode with built-in ATC.



## Meter Specifications

	Conductivity	Resistivity	TDS
<b>Range</b>	0.0 to 500.0 mS/cm	0 to 99.99 M $\Omega$	0 to 99999 ppm
<b>Resolution</b>	0.001 (0.000 to 9.999 $\mu\text{S}/\text{cm}$ ) 0.01 (10.00 to 99.99 $\mu\text{S}/\text{cm}$ ) 0.1 (100.0 to 999.9 $\mu\text{S}/\text{cm}$ ) 0.001 (1.000 to 9.999 mS/cm) 0.01 (10.00 to 99.99 mS/cm) 0.1 (100.0 to 500.0 mS/cm)	0.001 (0.000 to 9.999 $\Omega$ ) 0.01 (10.00 to 99.99 $\Omega$ ) 0.1 (100.0 to 999.9 $\Omega$ ) 0.001 (1.000 to 9.999 k $\Omega$ ) 0.1 (100.0 to 999.9 k $\Omega$ ) 0.001 (1.000 to 9.999 M $\Omega$ ) 0.01 (10.00 to 99.99 M $\Omega$ )	0.001 (0.000 to 9.999 ppm) 0.01 (10.00 to 99.99 ppm) 0.1 (100.0 to 999.9 ppm) 1 (1000 to 99999 ppm)
<b>Accuracy</b>	$\pm 0.5\%$ of full scale reading		
<b>Temperature range</b>	-5.0 to 105.0 °C (23.0 to 221.0 °F)		
<b>Resolution</b>	0.1 °C (0.1 °F)		
<b>Accuracy</b>	$\pm 0.3$ °C ( $\pm 0.5$ °F)		
<b>Temperature coefficient</b>	0 to 5.2 %/°C		
<b>Normalisation temperature</b>	15.0 to 30.0°C (59.0 to 86.0°F)		
<b>TDS factor</b>	0.66 to 1.00		
<b>Cell constant</b>	0.1, 1.0, 10.0		
<b>Display</b>	105 x 75 mm (screen size) custom LCD with contrasted background		
<b>Memory</b>	100 data sets		
<b>Power Requirement</b>	110VAC/220VAC, centre negative		
<b>Inputs &amp; output</b>	BNC, power socket, socket pin (2-cell Conductivity), DIN (4-cell Conductivity) & bi-directional RS232		
<b>Dimension/weight</b>	23 x 18 x 6 cm; 950g / 40 x 26 x 9 cm; 1.6kg		



## Ordering Information

Order Code	Description
EC-CON1500/13S	CyberScan CON 1500 meter with 4-cell epoxy body Conductivity electrode, K=1.0 (EC-620-165), integral electrode stand and 110VAC adapter
EC-CON1500/23S	CyberScan CON 1500 meter with 4-cell epoxy-body Conductivity electrode, K=1.0 (EC-620-165), integral electrode stand and 220VAC adapter

# CyberScan DO 1500

The solution for all your DO/BOD applications

- Measures Dissolved Oxygen (DO) in % saturation, ppm and mg/L.
- Can be used to determine Biochemical Oxygen Demand (BOD).
- Automatic calibration at 100% and independent 0% calibration enhances sensitivity for low oxygen measurement.
- Automatic compensation after manual input of barometric pressure and salinity values for variations in oxygen solubility to ensure optimum results.
- Includes a polarographic self-stirring DO/BOD probe (USA EPA approved).



## Meter Specifications

DO range ( ppm and mg/L )	0 to 60 ppm (mg/L)
Resolution ( ppm and mg/L )	0.01 ppm (mg/L)
DO range ( % saturation )	0 to 600 %
Resolution ( % saturation )	0.1 %
Accuracy	±0.1 % Full Scale + 1 digit
Temperature range	0.0 to 45.0 °C (32.0 to 113.0 °F )
Resolution	0.1 °C (0.1 °F)
Accuracy	±0.3 °C (±0.5 °F)
Barometric pressure compensation	450 to 825 mmHg
Salinity correction	0 to 45 ppt
Memory	100 data sets
Display	105 x 75 mm (screen size) custom LCD with contrasted background
Power requirement	12VDC, centre negative (110VAC/220VAC)
Inputs & output	DIN (DO), power jack & bi-directional RS232
Dimension/weight	23 x 18 x 6 cm; 950g (meter only) / 40 x 26 x 9 cm; 1.7kg (boxed)



## Ordering Information

Order Code	Description
EC-DO1500/12	CyberScan DO 1500 meter with self-stirring DO/BOD probe (EC-620-SSP) and 110VAC adapter
EC-DO1500/22	CyberScan DO 1500 meter with self-stirring DO/BOD probe (EC-620-SSP) and 220VAC adapter

# Electrodes

## General Purpose pH/ORP Electrodes

There is a wide choice - glass or engineering plastic, single or double junction, liquid or gel filled electrodes to suit your application and budget. Glass-body electrodes are very accurate with fast response and best suited for lab and field use. Sealed, gel-filled plastic-body electrodes are ideal for rugged environments.

Double junction electrodes minimise heavy metal contamination of reference electrode element and increase electrode lifespan. Refillable electrodes are ideal for viscous and low conductivity samples, as electrolyte can be replenished.

## Flushable Junction pH Electrodes

Perfect choice for difficult samples! Absence of ceramic or fibre junctions eliminates junction clogging, one of the most common problems with conventional electrodes. To clean, simply press down the cap and the filling electrolyte flushes away any viscous solution or small particles from the reference junction. And the electrode is ready again for reproducible and accurate readings.

## Rugged Bulb pH Electrodes

Offering greater durability, these electrodes are the best choice for applications where glass bulbs can break frequently and epoxy body electrodes are not practical. These electrodes are made up to 40 times tougher than conventional glass pH electrodes, without sacrificing response time.



## Specialty pH Electrodes

Suitable for special requirements like thin-stem NMR tubes, small vessels, micro samples to flat surface measurements.

## Solid-state Non-glass FET pH Electrodes

Use these electrodes for the most demanding applications without worrying about breakage. The no-glass design of FET electrode offers rapid, stable, reproducible results with minimal maintenance. Ideal for routine measurements in labs where measurement stability and sample carry-over are typical problems due to high workload and difficult samples.

Order Code	Description	pH Range	Temperature Range (°C)	Length/ Diameter (mm)	General Purpose	Biological/Pharmaceutical Tris Compatible	Education/Students Use	Emulsions	Field or Plant Use	Rugged Use	Large Sample Size	Low Ionic Strength	Process Measurements	Pulp & Paper	Small Sample Size	Soil	Titration	Viscous Samples	Acid Rain, Boiler Feed, Distilled, Rain, Well	Semisolids, (Fruit, Meat, Cheese)	Drinking	Sea Water	Wastewater
EC-620-116	Flow & flushable reference junction (Plastic-body)	0 to 14	0 to 100	175/12	•	•		•	•	•						•							
EC-620-109	Flow & flushable double junction, Ag/AgCl reference (Plastic-body)	0 to 14	0 to 100	175/12		•		•	•	•						•							
EC-620-185	Tough bulb variable temperature double junction (Glass-body)	0 to 14	-5 to 100	102/10	•	•	•						•	•						•	•	•	•
EC-620-181	Tough bulb single junction Ag/AgCl reference (Glass-body)	0 to 14	0 to 100	102/10	•		•			•							•						
EC-620-183	Tough bulb double junction Ag/AgCl reference (Glass-body)	0 to 14	0 to 100	102/10	•	•	•			•			•	•			•		•				
EC-620-293	Semi-micro, extra long, calomel reference (Glass-body)	0 to 14	-5 to 80	150/6		•					•				•								
EC-620-95	Micro-tip, 6" stem length, Ag/AgCl reference (Glass-body)	0 to 14	0 to 80	254/3		•									•								
EC-620-96	Micro-tip, 1.5" stem length, Ag/AgCl reference (Glass-body)	0 to 14	0 to 80	127/3		•									•								
EC-620-300	Polymer body liquid-filled, calomel reference (Plastic-body)	0 to 14	-5 to 80	106/10			•		•														
EC-620-755	Non-glass FET w/ATC (Plastic-body)	0 to 14	0 to 100	140/12						•										•			
EC-FG73504	Single-junction refillable Ag/AgCl reference (Glass-body)	0 to 13	-5 to 80	105/10	•	•					•												
EC-FG79601	ORP Platinum Ag/AgCl - reference (Glass-body)	0 to 100	-5 to 80	110/12	•		•														•		

Electrodes are supplied with 1-metre cable and BNC termination.

# Electrodes



## Conductivity Cells

Unique immersion-type probes ensure minimal air bubble entrapment and require smaller sample volumes. 2-cell (cell constants of 0.1, 1.0 and 10.0) and 4-cell models (cell constants of 1.0 and 10.0) are available in epoxy or glass bodies to suit most applications. 4-cell probe is ideal for measuring high conductivity measurements with minimal polarisation effect for more accurate readings.

### 2-cell Probes ( come with dual pin connectors)

Order Code	Description
EC-620-155	Glass-body, cell constant = 1.0
EC-620-156	Glass-body, cell constant = 0.1
EC-620-157	Glass-body, cell constant = 10.0
EC-620-160	Epoxy-body, cell constant = 1.0
EC-620-161	Epoxy-body, cell constant = 0.1
EC-620-162	Epoxy-body, cell constant = 10.0

### 4-cell Probes ( come with DIN and mini-ATC connectors)

Order Code	Description
EC-620-163	Glass-body, cell constant = 1.0
EC-620-164	Glass-body, cell constant = 10.0
EC-620-165	Epoxy-body, cell constant = 1.0
EC-620-166	Epoxy-body, cell constant = 10.0

Electrodes are supplied with 1-metre cable

## Dissolved Oxygen/BOD Probe

Polarographic DO/BOD probe with built-in stirrer creates a consistent flow past membrane for accurate measurement and faster response time. It has a silver anode, a gold cathode and supporting electrolyte separated from the sample solution by an oxygen permeable membrane. Minimal maintenance required as by replacing its user-replaceable membrane cap when necessary.

Order Code	Description
EC-620-SSP	Self-stirring DO/BOD probe

## Warranty

Eutech Instruments warrants its meters to be free from manufacturing defects for a period of 3 years and electrodes for 6 months.



Note: Eutech Instruments reserves the rights to make changes, improvements and modifications to products shown, without prior notice.

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