

# alpha-1000 Series Process Controllers



*Dissolved Oxygen*



*Conductivity*

*Resistivity*



*pH*

*Redox (ORP)*



**EUTECH**  
INSTRUMENTS

*Technology Made Easy ...*

Eutech Instruments is a dynamic company rapidly positioning itself globally as a leading manufacturer of electrochemical instrumentation for water analysis.

## Corporate Profile

*Becoming a leader in the field of electrochemical instrumentation.*

A pioneer in developing ASIC-based (Application Specific Integrated Circuit) instruments, Eutech Instruments has gained international awards and recognition for its achievements in sensor technology, software programming and product design. Underlying its strong commitment to Research & Development, is the constant drive by Eutech engineers to apply new, emerging technologies to the design and manufacture of advanced electrochemical instruments. Eutech offers a comprehensive range of laboratory and field instrumentation for water analysis and continuous on-line process instruments for monitoring and control of pH, Conductivity, Total Dissolved Solids, Redox Potential (ORP) and Dissolved Oxygen (DO). Eutech's products are certified to comply with global standards for electromagnetic emission and interference. Eutech Instruments is dedicated to producing convenience products for water analysis.

### MANUFACTURING

All instruments are manufactured by the company's team of skilled workers in-house, complying with a strict manufacturing code and quality control. At Eutech quality control is imperative at every stage of production.



### PRODUCT DESIGN

The design team works hard at designing instruments that are practical and easy to use in the laboratory and in the field. Some unique features include waterproof casing, replaceable sensor electrodes, slide-out instruction cards for troubleshooting hints, push-button calibration and functions, and features that optimise battery life. All products comply with the European Community's Electromagnetic Compatibility (EMC) standards.

### WORLD MARKET & FUTURE

At present, Eutech products have reached users in over 50 countries around the world through its extensive network of distributors and associated companies. With a global concern for water quality, Eutech Instruments has a unique opportunity to take advantage of the extraordinary growth that is expected to take place in the coming years.



### R & D

When leading scientists and engineers work as a team, the resulting synergy is unique and it is inevitable that product cycles evolve quickly. The resulting efforts of teamwork is state-of-the-art technology being incorporated in the design and production of its instruments. By putting customer satisfaction in the forefront, it stays well ahead of its competition.



# **i**ntroduction

## CONTROLLER / TRANSMITTER

The  $\alpha$ 1000 Series Controller/Transmitter includes measurement for:

- pH
- Redox (ORP)
- Conductivity
- Resistivity and
- Dissolved Oxygen

Each controller is equipped with a customized microprocessor - Application Specific Integrated Circuit, ASIC - and offers powerful features through the menu-driven SETUP program.

Eight sub-menus help configure the controller for specific applications. All settings are easily programmed through 6-button splashproof tactile keypad, and unauthorized tampering of data is avoided by the tri-level password - calibration, viewing and configuration of controller settings.

View set point values quickly at the push of a button. Relays can be manually operated directly from the keypad eliminating additional switches and wiring. In the calibration or configuration modes, relay operation is automatically deactivated. Factory default values can be reloaded anytime, directly from the controller. The EEPROM retains all configured settings and calibration data even in the event of a power failure.

The  $\alpha$ 1000 Series Controller/Transmitter is specially designed for easy wiring, mounting and installation. 17-pole and 5-pole detachable plug-in connectors are supplied together with the controller. These detachable plug-in connectors allow quick and easy wiring independent of the controller, thus connecting and disconnecting the controller from various wires is greatly simplified. Mounting of the controller into control panel is simplified with the side-mounting brackets (supplied) without using screwdrivers or other accessories.

Besides two independent set point relays, an additional alarm relay is provided. All three relays are potential-free, change-over contacts. Additional "HOLD" terminal allows for "Master-Slave" operation - whereby control action of one controller can be controlled by a second controller.

The  $\alpha$ 1000 Series Process Controller is protected from electromagnetic interference and is 'CE' certified. The splashproof front panel is rated IP54. Simple jumper selection for 110/220 VAC power supply allows these controllers to be used anywhere in the world, wherever there is a demand for water quality measurement and control ...



*The 17-pole  
detachable plug-in  
connector - for  
easier wiring*

# $\alpha$ I pha-pH1000 pH/ORP

CONTROLLER / TRANSMITTER



**1/4 DIN pH/ORP Controller/Transmitter with menu-driven program**

**CALIBRATION:** Direct, on-line Auto Calibration with choice of NIST or USA buffer standards. Electrode status is displayed after every successful calibration.

**TEMPERATURE COMPENSATION:** Choice of Automatic (with Pt 100 or Pt 1000) or Manual compensation.

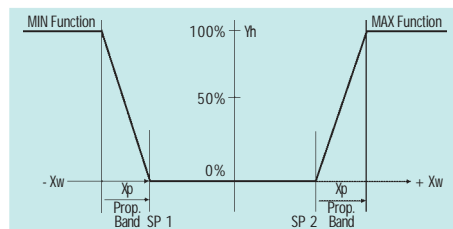
In the Automatic (ATC) mode, choice of two or three-wire systems is available with on-line calibration. If no temperature probe is available, Manual compensation is possible with independent Calibration and Process temperature inputs.

**CONTROL ACTION AND SET POINTS:**  $\alpha$ pha-pH1000 pH/ORP controllers may be operated as a limit or proportional controller.

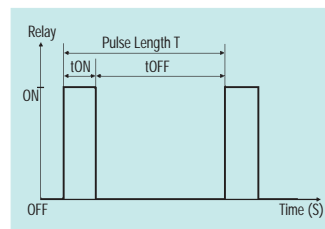
In the limit control mode, on/off timer delays are available for additional control of the relays. Rapid contact switching is prevented by the hysteresis (dead band, for each set point. Each set point can be programmed to operate as 'Hi' or 'Lo', independently. Relay status can be switched from energized mode to de energized, at the touch of a button – no necessity to re-wire the controller.

For fine control, switch to proportional control – Pulse Length or Plus Frequency.

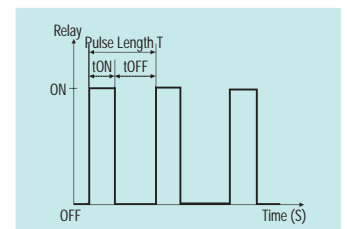
**WASH-CYCLE:** Program the controller to initiate "electrode wash" at scheduled time intervals. The alarm relay contact serves as an additional relay for connection to the peripheral device.



Control characteristic of P-controller as proportional controller



Controller signal of pulse length control



Controller signal of pulse frequency control

**OUTPUT:** 0/4-20mA output is galvanically isolated with a maximum load of 600 $\Omega$ . The output is scaleable and can be zoomed to a 1 pH window across the measurement range, from 0 pH to 14 pH. This can be used to maximize the resolution on the chart recorder.

**CONFIGURATION:** In environments with electrical interference, the alpha-pH1000 controller is ideal when configured to the symmetrical mode and used with a potential matching pin. The presence of Hydrofluoric acid is detrimental to the glass electrode - select an Antimony electrode and configure the alpha pH1000 controller accordingly. False alarms can be avoided with the alarm function. This can be set to delay alarm from 0 to 2000 seconds, and the mode of activation can be configured to pulse or continuous.

**pH or ORP CONTROLLER:** Inventory is reduced with this two-in-one controller, where the same controller can be easily configured (via keypad) to operate in pH, ORP (mV) or ORP (% concentration) modes.

**SPECIFICATIONS:**

<b>αlpha-pH1000 pH/ORP Controller</b>	
pH Range	-2.00 to 16.00 pH
Resolution / Accuracy	0.01 pH / ±0.01 pH
mV Range	0 to 100.0% / -1000 to +1000 mV
Resolution / Accuracy	0.1% of Full Scale / 1 mV / ±1 mV
Temperature Range	-9.9 to +125.0 °C With Pt 1000 or Pt 100 (Automatic / Manual Compensation)
Resolution / Accuracy	0.1 °C / ±0.5 °C
Temperature Sensor Configuration	2-Wire / 3-Wire
Offset Adjustment Range	±5 °C During ATC
<b>Set-point And Controller Functions</b>	
Function (Switchable Via Software)	Limit or Proportional Control (Pulse Length or Pulse Frequency)
Pickup / Dropout Delay	0 to 2000 Seconds
Wash Cycle	0.1 to 199.9 hours (Duration: 1 to 1999 Seconds)
Switching pH Hysteresis	0.1 to 1 pH
Switching ORP Hysteresis	1 to 10.0% / 10 to 100 mV
Offset Adjustment Range	±120 mV
Signal Input	Asymmetrical / Symmetrical
pH / ORP Input	BNC Terminal

\* Refer to back page for specifications common to the alpha 1000 series

## Industrial Grade pH/ORP Sensors

Housed in rugged Ryton (PPS) body with annular Teflon double junction, these sensors offer durability, ruggedness and reliable measurements. The reference consists of polymerized gel with self-inflating 'bladders', which ensures a constant and uniform flow of KCl. The polymerized gel also allows pressure tolerances of up to 9 bar. Models are also available for high temperature applications (up to 110 °C). In some models, a built-in SS316 ground pin (potential matching pin) can be used as a liquid ground to eliminate electrical interference in the process.

Installation is simplified with 3/4" NPT threads present on top and bottom of the electrode housing, inclusive of an integral 5m low noise pH/ORP measuring co-axial cable.

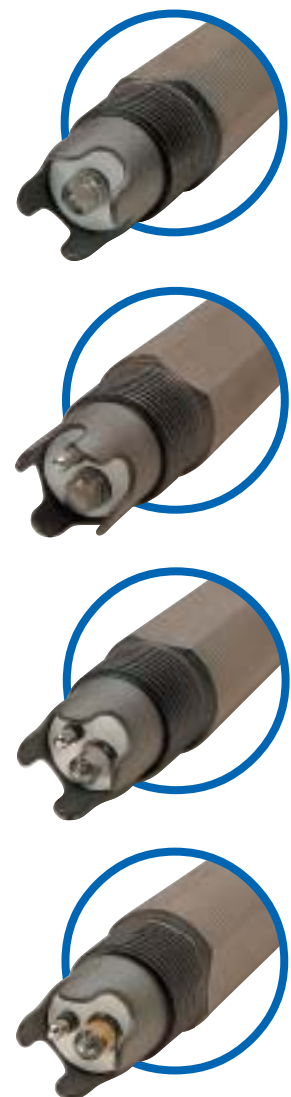
**SPECIFICATIONS:**

<b>Ryton-body pH Electrodes</b>				
Specifications	EC-ARHTT50	EC-ART50	EC-ARGT50	EC-100GT50
Range	1 - 14 pH			
Material	PPS (Ryton)			
Thread	3/4" NPT			
Construction	Annular Teflon Double Junction; Polymerized Non-refillable Gel			
Pressure Rating	9 Bar			6 Bar
Potential Matching Pin	No		Yes (SS316)	
Temperature Sensor	No		Integrated Pt100	
Operating Temperature	0 - 110 °C			0 - 80 °C
Cable	Integral 5 Meter Low-noise Semi-conductor Screen Cable, BNC Termination			
<b>ORP Electrodes</b>				
Specifications	EC-HTAUTS005B		EC-HTPTTS005B	
Sensor	Gold		Platinum	
Material	PPS (Ryton)			
Thread	3/4" NPT			
Construction	Annular Teflon Double Junction; Polymerized Non-refillable Gel			
Pressure Tolerance	6 Bar			
Potential Matching Pin	Yes (SS316)			
Operating Temperature	0 - 80 °C			
Cable	Integral 5 Meter Low-noise Semi-conductor Screen Cable, BNC Termination			

**ORDERING INFORMATION:**

Order No.	Item
EC-PHCTP1001	αlpha-pH1000 pH/ORP controller with 110 VAC
EC-PHCTP1002	αlpha-pH1000 pH/ORP controller with 220 VAC
EC-ART50-05B	Full dome pH electrode (general purpose)
EC-ARTSOHF-05B	HF Resistant pH Electrode
EC-ARHTT50-05B	Full dome pH electrode (high temperature)
EC-ARGT50-05B	Full dome pH electrode with potential matching pin
EC-100GT50-05B	Full dome pH electrode with Pt 100 and potential matching pin
EC-HTPTTS0-05B	Platinum ORP electrode (high temperature) with potential matching pin
EC-HTAUTS0-05B	Gold ORP electrode (high temperature) with potential matching pin

\* Extension cables available



*Wide selection of pH and ORP sensors to give reliable and accurate measurements. Teflon reference junction prolongs life-span with quick and easy maintenance.*

# Alpha-CON1000 Conductivity

CONTROLLER / TRANSMITTER



**MEASUREMENT RANGE:** The  $\alpha$ pha-CON1000 Conductivity controller offers ten different ranges of conductivity. Conductivity range and its appropriate cell constant can be selected simply from the keypad through the setup menu. No need to select jumpers! Available conductivity ranges are:

Range No.	Conductivity Range	Cell Constant, K
1	0.000 to 1.999 $\mu$ S/cm	0.01
2	0.00 to 19.99 $\mu$ S/cm	0.01
3	0.00 to 19.99 $\mu$ S/cm	0.1
4	0.0 to 199.9 $\mu$ S/cm	0.1
5	0.0 to 199.9 $\mu$ S/cm	1.0
6	0 to 1999 $\mu$ S/cm	1.0
7	0 to 5000 $\mu$ S/cm	1.0
8	0.00 to 19.99 mS/cm	1.0
9	0.0 to 199.9 mS/cm	10.0
0	0.0 to 199.9 mS/cm	1.0

*"10-in-1" Conductivity Controller/Transmitter. Range number indicated on screen*

**TEMPERATURE COEFFICIENT:** Higher accuracy in conductivity readings is obtained by adjusting the Temperature Coefficient for the sample solution, from 0.0% to 10.0%.

In addition, for Pure Water applications, pure water compensation option is available to correct for the non-linearity of pure water temperature correction curves.

**TEMPERATURE COMPENSATION:** Automatic or Manual Temperature Compensation options are standard. Either a Pt1000 or Pt100, two or three-wire systems can be used in the ATC mode. On-line calibration of the temperature probe is possible, in the ATC mode.

In the absence of a temperature sensor, Manual temperature compensation with independent Calibration and Process temperature inputs allows for a one-point temperature compensation.

**ELECTRODE DIAGNOSTICS:** After each successful calibration, cell characteristics are displayed... a useful tool in tracking the efficiency of the cell. In the event of unsuccessful calibration procedures, previous calibration data is retained.

**CABLE-RESISTANCE COMPENSATION:** The unique 'line adjustment' feature corrects for cable noise due to the resistance. An important feature useful in applications involving high conductivity measurements.

**OUTPUT:** 0/4-20mA output is galvanically isolated with a maximum load of 600 $\Omega$ . The output is scaleable across the measurement range, maximizing resolution on the chart recorder.

**SPECIFICATIONS:**

<b>αAlpha-CON1000 Conductivity Controller</b>			
Conductivity Range	Resolution	Accuracy	Cell Constant, K
0.000 to 1.999 μS/cm	0.01 μS/cm	±1% of Full Scale	0.01
0.00 to 19.99 μS/cm	0.01 μS/cm	±1% of Full Scale	0.01
0.00 to 19.99 μS/cm	0.01 μS/cm	±1% of Full Scale	0.1
0.0 to 199.9 μS/cm	0.1 μS/cm	±1% of Full Scale	0.1
0.0 to 199.9 μS/cm	0.1 μS/cm	±1% of Full Scale	1.0
0 to 1999 μS/cm	1 μS/cm	±1% of Full Scale	1.0
0 to 5000 μS/cm	5 μS/cm	±1% of Full Scale	1.0
0.00 to 19.99 mS/cm	0.01 mS/cm	±1% of Full Scale	1.0
0.0 to 199.9 mS/cm	0.1 mS/cm	±1% of Full Scale	1.0
0.0 to 199.9 mS/cm	0.1 mS/cm	±1% of Full Scale	10.0
Temperature Range	-9.9 to 125 °C With Pt 1000 or Pt 100 (Automatic / Manual Compensation)		
Resolution / Accuracy	0.1 °C / ±0.5 °C		
<b>Set-point And Controller Functions</b>			
Controller Characteristics	Limit Controller		
Pickup / Dropout Delay	0 to 2000 Sec.		
Switching Conductivity Hysteresis	0 to 10% of Full Scale		

\* Refer to back page for specification common to the alpha 1000 series

# Conductivity Cells

All cells have integral Pt100 temperature sensor and five-core double-shielded 25ft cable (open-ended). With pressure tolerance of 6 bar, the cells are suitable for in-line measurements. For immersion, simply invert the 1/2" NPT threaded adapter. Cell constants (K) of 1.0, 0.1 and 0.01 are available in Stainless Steel, SS316. For ultra-pure water applications, the 0.01 cell is also available in Titanium.

**SPECIFICATIONS:**

<b>Conductivity Cells</b>				
Specifications	EC-CS10-0-01T	EC-CS10-0-01S	EC-CS10-0-1S	EC-CS10-1-0S
Range	Up to 20 μS/cm		0.1 - 200 μS/cm	Up to 200 mS/cm
Cell Constant, K	0.01		0.1	1.0
Material	Titanium	SS316		
Thread	1/2" NPT			
Pressure Rating	6 Bar			
Temperature Sensor	Integrated Pt100			
Cable	Integrated 25 feet, 5 wire double-shielded, open-ended cable			

**ORDERING INFORMATION:**

Order No.	Item
EC-CONCTP1001	αAlpha-CON1000 conductivity controller with 110 VAC
EC-CONCTP1002	αAlpha-CON1000 conductivity controller with 220 VAC
EC-CS10-0-01S	Conductivity cell, 0.01 cell constant, stainless steel
EC-CS10-0-01T	Conductivity cell, 0.01 cell constant, titanium
EC-CS10-0-1S	Conductivity cell, 0.1 cell constant, stainless steel
EC-CS10-1-0S	Conductivity cell, 1.0 cell constant, stainless steel

\* Extension cables available



*Precision cells available in Stainless Steel (SS316) and Titanium (for cell constant, k = 0.01). Installation is quick and easy with the 1/2" NPT threaded adapter.*

# Alpha-RES 1000 Resistivity

CONTROLLER / TRANSMITTER



**MEASUREMENT RANGE:** The alpha-RES1000 Resistivity controller offers two measurement ranges with the respective cell constant:

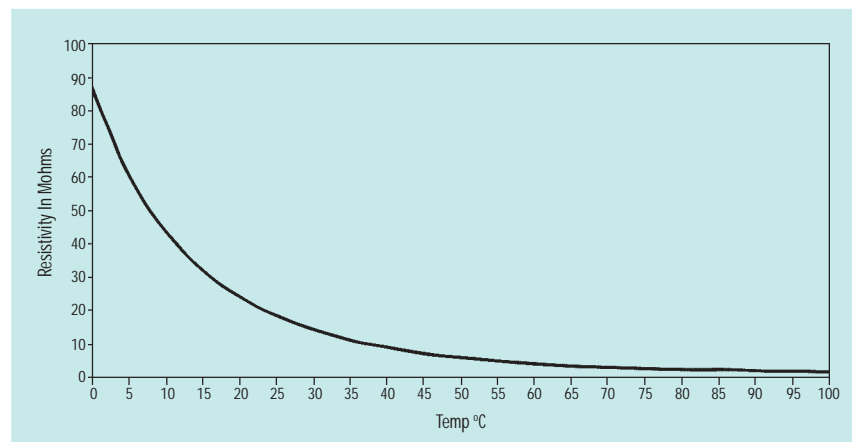
Range No.	Resistivity Range	Cell Constant, K
1	0.00 to 19.99 MΩ	0.01
0	0.000 to 1.999 MΩ	0.1

High level of accuracy,  $\pm 1\%$  of full scale is obtained in ultra-pure or R.O. applications, when used with the appropriate cells and correct temperature coefficient.

**TEMPERATURE COEFFICIENT:** Higher accuracy in resistivity readings is obtained by adjusting the Temperature Coefficient for the sample solution. The alpha-RES1000 controller allows values between 0.0% to 10.0% to be input.

In addition, for "Pure" water applications, a pure water compensation option is available to correct for the non-linearity of pure water temperature correction curves.

*Resistivity Controller/Transmitter packed with features to measure 18.2 MΩ water*



Resistivity Of Pure Water

**TEMPERATURE COMPENSATION:** Automatic or Manual Temperature Compensation options are standard. Either a Pt1000 or Pt100, two or three-wire systems can be used in the ATC mode. On-line calibration of the temperature probe is possible, in the ATC mode.

Either a Pt1000 or Pt100, two or three-wire systems can be used in the ATC mode. On-line calibration of the temperature probe is possible.

In the absence of a temperature sensor, Manual temperature compensation with independent Calibration and Process temperature inputs offers one-point temperature compensation.

**ELECTRODE DIAGNOSTICS:** After each successful calibration, cell characteristics are displayed. Useful tool in tracking the efficiency of the cell. In the event of an unsuccessful calibration, previous calibration data is retained.

**OUTPUT:** 0/4-20mA output is galvanically isolated with a maximum load of 600Ω. The output is scaleable across the measurement range, maximizing resolution on the chart recorder.



**SPECIFICATIONS:**

<b>αpha-RES1000 Resistivity Controller</b>			
Resistivity Range	Resolution	Accuracy	Cell Constant, K
0.000 to 1.999 MΩ	0.001 MΩ	±1% of Full Scale	0.1
0.00 to 19.99 MΩ	0.01 MΩ	±1% of Full Scale	0.01
Temperature Range	-9.9 to 125 °C With Pt 1000 or Pt 100 (Automatic / Manual Compensation)		
Resolution / Accuracy	0.1 °C / ±0.5 °C		
Temperature Coefficient	Ultra-Pure Water or Linear 0.00 to 10.00%, S/W Selectable @ 25.0 °C		
<b>Set-point And Controller Functions</b>			
Controller Characteristics	Limit Controller		
Pickup / Dropout Delay	0 to 2000 Seconds		
Switching Resistivity Hysteresis	0 to 10% of Full Scale		

\* Refer to back page for specification common to the alpha 1000 series

## Resistivity Cells

All cells have integral Pt100 temperature sensor and five-wire double-shielded 25ft cable (open-ended). With pressure tolerance of 6 bar, the cells are suitable for in-line measurements.

For immersion, simply invert the 1/2" NPT threaded adapter for the electrode holder. Cell constants of 0.1 and 0.01 are available in Stainless Steel, SS316. For ultra-pure water applications, the 0.01 cell is available in Titanium.

**SPECIFICATIONS:**

<b>Resistivity Cells</b>			
Specifications	EC-CS10-0-01T	EC-CS10-0-01S	EC-CS10-0-1S
Range	0.00 - 19.99 MΩ		0.000 - 1.999 MΩ
Cell Constant, K	0.01		0.1
Material	Titanium	SS316	
Thread	1/2" NPT		
Pressure Rating	6 Bar		
Temperature Sensor	Integrated Pt100		
Cable	Integrated 25 feet, 5 wire double-shielded, open-ended cable		

**ORDERING INFORMATION:**

Order No.	Item
EC-RESCTP1001	αpha-RES1000 resistivity controller with 110 VAC
EC-RESCTP1002	αpha-RES1000 resistivity controller with 220 VAC
EC-CS10-0-01S	Conductivity cell, 0.01 cell constant, stainless steel
EC-CS10-0-01T	Conductivity cell, 0.01 cell constant, titanium
EC-CS10-0-1S	Conductivity cell, 0.1 cell constant, stainless steel
EC-CS10-1-0S	Conductivity cell, 1.0 cell constant, stainless steel

\* Extension cables available



*For ultra-pure water measurements, 0.01 cell constant probe is available in Titanium, preventing contamination of the purified water.*

# Alpha-DO 1000 Dissolved Oxygen

CONTROLLER / TRANSMITTER



*Versatile D.O. Controller/Transmitter displays readings either in mg/l, % or ppm*

**MEASUREMENT RANGE:** The  $\alpha$ pha-DO1000 Dissolved Oxygen controller is able to accept two different probes; low-range, 0 to 10 ppm and general-range 0.5 to 40 ppm.

Unit of measurement is either in ppm, mg/l or % saturation.

**CALIBRATION:** The  $\alpha$ pha-DO1000 controller allows a one or two-point calibration. After each successful calibration, electrode status is displayed.

**SALINITY AND PRESSURE COMPENSATION:** Dissolved Oxygen measurements vary with the salinity and the atmospheric pressure. Hence, the  $\alpha$ pha-DO1000 controller allows the input of salinity (in the mg/l or ppm modes) and pressure (mm Hg or KPa) values and automatically compensates the measured values.

**TEMPERATURE COMPENSATION:** Temperature compensation, either Automatic or Manual is available. Pt100, two or three-wire systems can be used for ATC. On-line calibration of the temperature probe is possible.

In the absence of a temperature sensor, Manual temperature compensation with independent Calibration and Process temperature inputs offers one-point temperature compensation.

**CONTROL ACTION AND SET POINTS:** The  $\alpha$ pha-DO1000 Dissolved Oxygen controllers have the versatility of being operated as a limit or proportional controller.

When programmed to operate in the Limit control mode, further control of the relays is provided in the form of independent timer delays (up to 30 mins!) for switching on as well as switching off the relays.

For critical control, simply configure the controller for proportional control and select the mode of operation as Pulse Length or Pulse Frequency. The proportional band as well as the time/frequency can be configured independently.

Each set point can be programmed to operate as 'Hi' or 'Lo', independently. Relay status can be switched from the energized mode to de-energized at the touch of a button - no necessity to re-wire the controller.

**ELECTRODE DIAGNOSTICS:** After each successful calibration, cell characteristics are displayed. Useful tool in tracking the efficiency of the cell. In the event of an unsuccessful calibration, previous calibration data is retained.

**OUTPUT:** 0/4-20mA output is galvanically isolated with a maximum load of  $600\Omega$ . The output is scaleable across the measurement range, maximizing resolution on the chart recorder.

**SPECIFICATIONS:**

<b>αlpha-DO1000 Dissolved Oxygen Controller</b>	
Dissolved Oxygen Range	0.00 to 20.00 mg/l or 0.0 to 200.0 % Saturation
Resolution / Relative Accuracy	0.01 mg/l or 0.1% / ±1.5% of Full Scale Reading For Both Ranges
No. Of Calibration Points	1(100% Saturation) or 2 (100% And 0% Saturation) Points
Flow Rate	1-2 cm/seconds (Dependent On Both Temperature & Oxygen Level)
Response Time	40 - 50 Seconds To Attain 95%
Temperature	-9.9 to 125 °C With Pt 100 (Automatic / Manual Compensation)
Resolution / Accuracy	0.1 °C / ±0.5 °C
Pressure Input	KPa/mmHg (Manual Input And Automatic Correction)
Salinity Input Range	0.0 to 50.0 ppt (Manual Input And Automatic Correction)
<b>Set-point And Controller Functions</b>	
Controller Characteristics	Limit or Proportional Control (Pulse Length or Pulse Frequency)
Adjustable Period With Pulse Length Control	0.5 to 20 Seconds
Adjustable Period With Pulse Frequency Control	60 to 120 Pulses / Minutes
Pickup / Dropout Delay	0 to 2000 Seconds
Switching D.O. Hysteresis	0.1 to 1.0 mg/l or 1 to 10.0%
D.O. Input	Screw Terminals

\* Refer to back page for specification common to the αlpha 1000 series

## Dissolved Oxygen Probes

Two probes are available: the low-range (0 to 10 ppm) and for general measurements (0.5 to 40 ppm). The probe utilizes the Galvanic measuring principle in determining the amount of Oxygen in the media. Response is quick, attaining 95% of the readings within 40 to 50 seconds.

Membrane of the Oxygen probe is virtually maintenance free. Occasional swipes, using a soft cloth clears the membrane of deposits. A major advantage of the Eutech Dissolved Oxygen Probe is the ability to service the probe at site, in situ.



*Galvanic measuring probes allows quick readings to be taken. Maintenance is reduced with the Teflon membrane. Select EC-DOTPII for low dissolved oxygen measurement.*

**SPECIFICATIONS:**

<b>Dissolved Oxygen Probe</b>		
<b>Specifications</b>	<b>EC-DOGEN</b>	<b>EC-DOTPII</b>
Range	0.5 - 40 ppm	0 - 10 ppm
Flow Rate	1 - 2 cm/sec (Dependent on both temperature & oxygen level)	
Response Time	40 - 50 Seconds to Attain 95%	
Pressure Tolerance	6 Bar	
Temperature	0 - 50 °C (Display: -9.9 to 125 °C)	
Resolution	0.1 °C	
Relative Accuracy	±0.5 °C	
Sensor	Pt 100	
Temperature Response	Approximately 1 Minute / °C	
Material	Epoxy Housing; Teflon Membrane	
Cable	Integral 5 Meter, Open-ended	

**ORDERING INFORMATION:**

<b>Order No.</b>	<b>Item</b>
EC-DOCTP1001	αlpha-DO1000 dissolved oxygen controller with 110 VAC
EC-DOCTP1002	αlpha-DO1000 dissolved oxygen controller with 220 VAC
EC-DOGEN	General purpose dissolved oxygen electrode (0 to 40 ppm)
EC-DOTPII	Low concentration dissolved oxygen electrode (0 to 10 ppm)

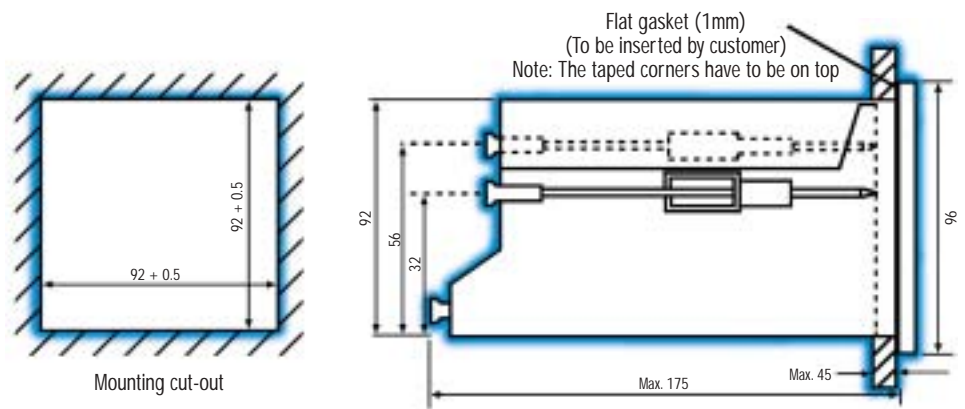


# Technical Information

## LINE DIAGRAMS WITH DIMENSION

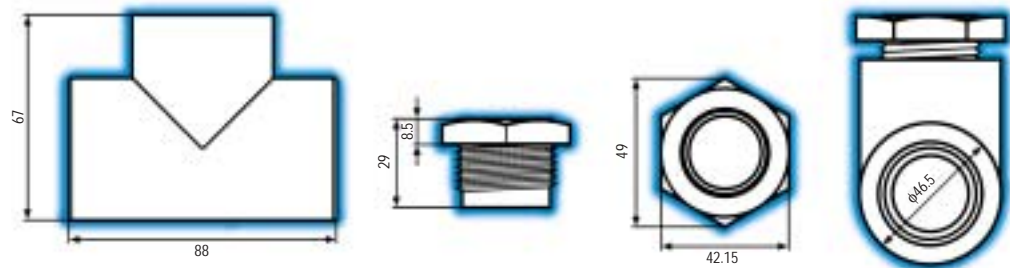
(All measurements in mm)

### CONTROLLER



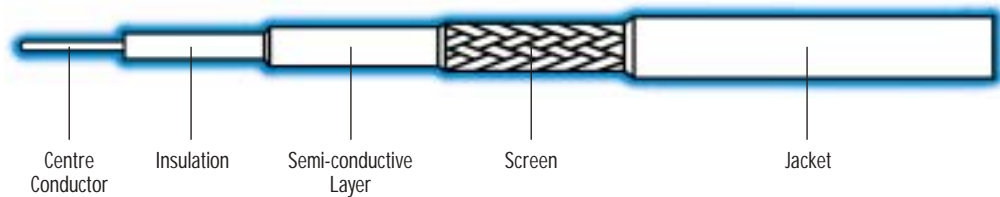
The field-tested control panel housing is 96 x 96 mm; with protection class IP 54 (front)

### ACCESSORIES



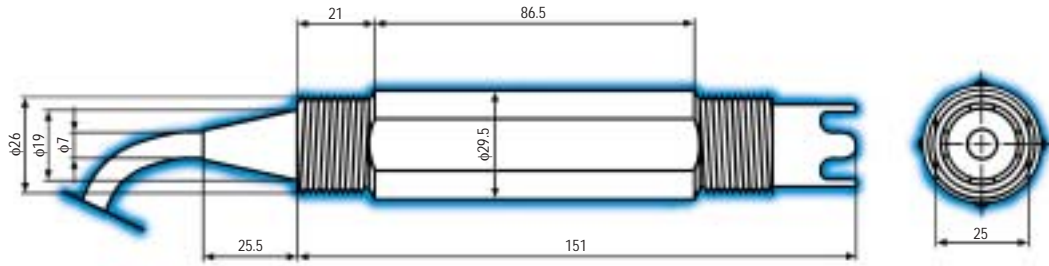
Electrode Tee 1" NPT

Tee Adapter 3/4" to 1"

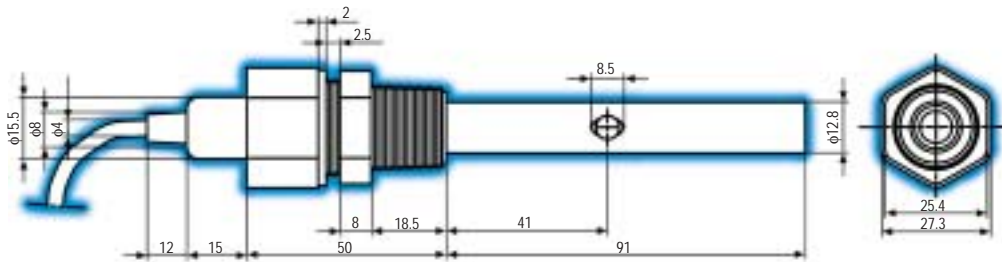


Low Noise pH Cable

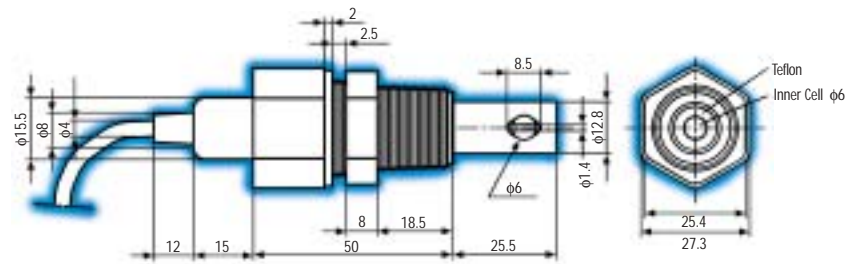
**pH / ORP ELECTRODES**



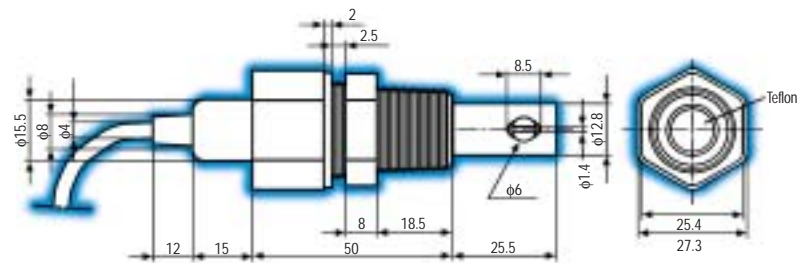
**CONDUCTIVITY / RESISTIVITY CELLS**



ECCS10-0-01S/ECCS10-0-01T

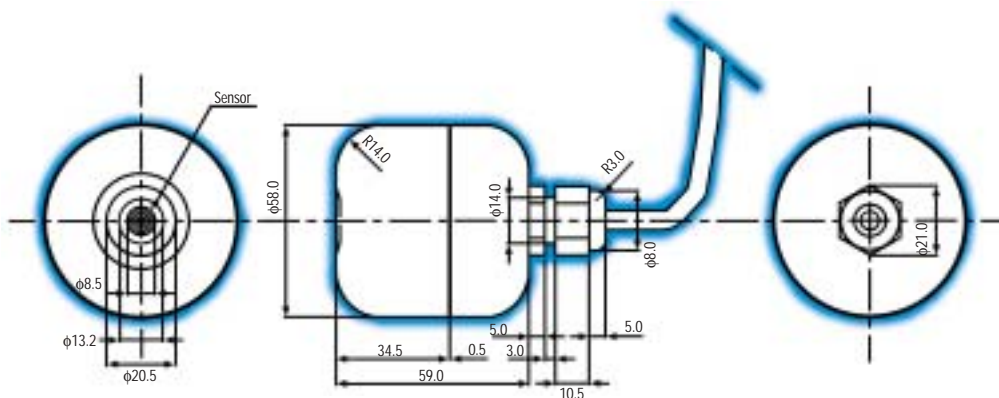


ECCS10-0-1S



ECCS10-1-0S

**DISSOLVED OXYGEN PROBES**



# A accessories

FOR PROBE INSTALLATION AND MAINTENANCE

## Fittings

Description	Order Code
Electrode Tee, Kynar Material with 3/4" to 1" Adapter	EC-AK061014
Electrode Tee, CPVC Material with 3/4" to 1" Adapter	EC-AC021011
Electrode Tee, CPVC Material with 1/2" to 1" Adapter	EC-AC021022
BNC-BNC Adapter (For Extension Cable)	EC-CONBNCBNC

## Cables/Pre-Amplifier

Description	Order Code
5 mm Diameter SMK Low-noise Semi-conductor Screened Cable with BNC-BNC Termination for pH/ORP	EC-CBLB5SMK-XX*
7 mm Diameter SMK Low-noise Semi-conductor Screened, Double-shielded Cable with BNC-BNC Termination for pH/ORP	EC-CBLB7SMK-XX*
Combination Low-noise Measuring Cable for pH and ATC	EC-CBLB7KMK-XX*
Double-shielded Low-noise Extension Cable for Conductivity/Resistivity and ATC (Standard Length of 25 Meters)	EC-CBL-8723-C25
Pre-Amplifier with BNC Connectors (For Cable Lengths Exceeding 25 m)	EC-PREAMP

\* XX refers to standard lengths of 5, 10, 15, 20, 25 and 50 meters (50 meter roll does not have BNC-BNC termination).

## Dissolved Oxygen Probe Maintenance Kit

Description	Order Code
Kit for EC-DOGEN (50 ml Electrolyte, O-rings, Membranes - Set of 5, 1 Anode with Nut and 1 Membrane Housing)	EC-DOGENKIT
Kit for EC-DOTPII (50 ml Electrolyte, O-rings, Membranes - Set of 5, 1 Anode with Nut and 1 Membrane Housing)	EC-DOTPIIKIT

## Calibrating Solutions For pH, Conductivity & ORP

Description	Order Code
<b>pH Buffer Solutions</b>	
pH 1.68 Buffer Solution	EC-BU-1BT
pH 4.01 Buffer Solution	EC-BU-4BT
pH 7.00 Buffer Solution	EC-BU-7BT
pH 9.00 Buffer Solution	EC-BU-9BT
pH 10.01 Buffer Solution	EC-BU-10BT
pH 12.45 Buffer Solution	EC-BU-12BT
<b>Conductivity Standard Solutions</b>	
100 µS KCl Solution	EC-CON-100BT
500 µS KCl Solution	EC-CON500BT
1'413 µS KCl Solution	EC-CON-1413BT
2'764 µS KCl Solution	EC-CON2764BT
12.88 mS KCl Solution	EC-CON1288BT
50 ppm 442 Solution	EC-442-50BT
300 ppm 442 Solution	EC-442-300BT
1000 ppm 442 Solution	EC-442-1000BT
3000 ppm 442 Solution	EC-442-3000BT
<b>ORP Standard Solutions</b>	
Pre-treatment Solution (470 mV)	EC-ORP-PRE
Quinhydrone 255 (255 mV ± 15 mV @ 25°C)	EC-ORP-QUIN
Quinhydrone 86 (86 mV)	EC-ORP-QUIN86
<b>Storage Solution</b>	
Storage Solution for pH Electrodes	EC-RE-005



WHEREVER THERE IS A DEMAND FOR  
WATER QUALITY MEASUREMENT, THERE  
IS A NEED FOR EUTECH INSTRUMENTS.

## Specifications Common To The alpha-1000 Series



Eutech Instruments manufactures a comprehensive range of laboratory and field instrumentation for water analysis. Eutech Instruments also produces on-line process instruments for water quality monitoring and control. Innovative products from Eutech include:

- (a) Standard Hand-held Meters
- (b) Waterproof Hand-held Meters
- (c) Waterproof Testers
- (d) Laboratory Bench Meters
- (e) Industrial Process Controllers
- (f) Economy Palm-sized Meters



Design of Eutech's products are patented under the United States Patent Law. Patent rights in other areas are pending.

### WORLD-WIDE SALES AND SERVICE SUPPORT

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#### Set-Point And Alarm Functions

Contact Outputs, Controller	2 Potential-Free Change-Over Contacts And 1 Alarm / Wash Output
Set-Points	2 Points: Lo/Lo, Lo/Hi, Hi/Lo, Hi/Hi (Selectable)
Alarm Function (Switchable Via Software)	Latching/Pulse
Alarm Pickup Delay	0 to 2000 Seconds
Switching Voltage/ Current/Power	Max 250 VAC / Max. 3A / Max. 600 VA

#### Electrical Data And Connections

Power Requirements/ Frequency	110/220 VAC (Jumper Selectable)/ 48 - 62 Hz
Signal Output	0/4 to 20 mA, Galvanically Isolated, Max. Load: 600Ω
Connection Terminal	Terminal Blocks 5-Pole / 17-Pole, Detachable
Mains Fuse/Fine Wire Fuse	Slow-Blow 250 V / 100 mA

#### EMC Specifications

Emissions	Conforms To EN 50081-1 And EN 50082-1
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#### Environmental Conditions

Operating Range	Ambient Temperature: 0 to +50 °C And Humidity: 10 to 95%, Non-Condensing
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#### Mechanical Specifications

Dimensions (L x H x W)	175 x 96 x 96 mm
Weight	Max. 0.7 kg
Insulation (Front/Housing)	IP 54 / IP 40

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