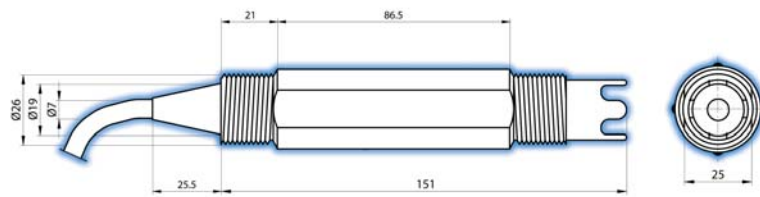


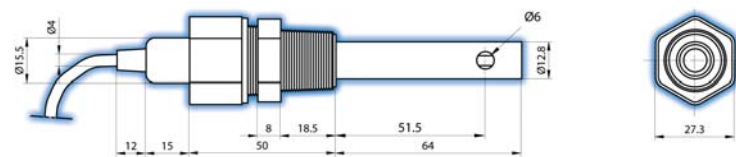
Technical Information

Dimensions (in mm)

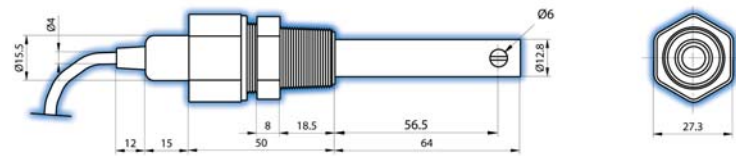
pH/ORP Electrode



Conductivity/TDS Cells



ECCS10-0-1S



ECCS10-1-0S



ECCONSEN89X



ECCONSEN88X

Electrodes

pH/Conductivity/TDS

pH Electrode	EC100GTSO-05B	ECARGTSO-05B	ECARHTTSO-05B	ECARTSOHF-05B
Range	0 to 14 pH			0 to 14 pH HF resistant
Reference	Annular Teflon, double junction			
Reference electrolyte	Saturated KCl, polymerized gel			
Operating temperature	0 to 80 °C		0 to 110 °C	
Pressure tolerance	6 bars		9 bars	
Temperature sensor	Pt 100		N.A.	
Potential matching pin	Platinum		N.A.	
Material	PPS (Ryton)			
Thread	1/4" NPT			
Cable	Integral 5m low-noise semi-conductor screened			
Connector	BNC			
Dimensions : Length Diameter	151 mm (excludes cable) 26 mm (external)			
Weight	650 g		430 g	

pH/ORP Electrode	ECARTSO-05B	DA9350605B	ECHTAUTSO-05B	ECHTPTTTO-05B
Range	0 to 14 pH		-999 to +1000 mV	
Sensor	N.A.		Gold Platinum	
Reference	Annular Teflon, double junction	Annular Ceramic ring, double junction	Annular Teflon, double junction	
Reference electrolyte	Saturated KCl, polymerized gel	Saturated KCl, liquid-fill	Saturated KCl, polymerized gel	
Operating temperature	0 to 80 °C	0 to 50 °C	0 to 80 °C	
Pressure tolerance	6 bars	1 bars	6 bars	
Potential matching pin	Platinum	N.A.	Platinum	
Material	PPS (Ryton)	ABS plastic	PPS (Ryton)	
Thread	1/4" NPT	N.A.	1/4" NPT	
Cable	Integral 5m low-noise semi-conductor screened		Integral 5m low-noise semi-conductor screened	
Connector	BNC		BNC	
Dimensions : Length Diameter	151 mm (excludes cable) 26 mm (external)		151 mm (excludes cable) 26 mm (external)	
Weight	430 g		500 g	

Conductivity Electrode	CONSEN88X	CONSEN89X	ECCS10-0-1S	ECCS10-1-0S
Conductivity range	0.01 to 2 mS/cm	0.1 to 200 µS/cm	up to 100 mS/cm	
Cell constant, k	1.0	0.1	0.1, 2-cell	
Temperature sensor	Pt100			
Pressure rating	1 bar	6 bar		
Material	Graphite	SS 316		
Thread	N.A.	1/2" NPT		
Cable	Integral 7.5m 6-wire double-shielded, open			
Dimensions : Length Diameter	132 mm 12 mm	168 mm (excludes cable) 12.8 mm (external)		
Weight	316 g	595 g		

Ordering Information

pH/Conductivity/TDS

Product Description	Order Code
alpha pH 190 pH/ORP Controller/Transmitter	ECPHCTP0190
pH Combination Electrode with Pt 100 RTD and PMP	EC-100GTSO-05B
pH Combination Electrode with HF resistant glass (w/o ATC & PMP)	EC-ARTSOHF-05B
pH Combination Electrode with PMP (w/o ATC)	EC-ARGTSO-05B
pH Combination Electrode with high temperature (110 °C) and high pressure resistance (9 bar) (w/o ATC & PMP)	EC-ARHTTSO-05B
pH Combination Electrode (w/o ATC & PMP)	EC-ARTSO-05B
Submersible pH Combination Electrode (w/o ATC & PMP)	ECDA93506-05B
ORP Gold Electrode	EC-HTAUTSO-05B
ORP Platinum Electrode	EC-HTPTTTO-05B
alpha CON 190 Controller/Transmitter	ECCONCTP0190
alpha TDS 190 Controller/Transmitter	ECTDSCTP0190
Conductivity cell, epoxy body graphite sensor, 0.1 cell constant	ECCONSEN89X
Conductivity cell, epoxy body graphite sensor, 1.0 cell constant	ECCONSEN88X
Conductivity cell, stainless steel, 1.0 cell constant	ECCS10-1-0S
Conductivity cell, stainless steel, 0.1 cell constant	ECCS10-0-1S

Warranty

Eutech Instruments warrants its meters to be free from manufacturing defects for a period of 1 year 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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CON 08X233-409 3/05 Rev 0

alpha 190 series

Controllers & Transmitters

1/8 DIN Panel Mount Controllers for Process Monitoring and Control



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alpha I90 Series

1/8 DIN Panel Mount Controllers/Transmitters

Process Control is now easy...

- Easy Set Points Adjustment**
 SPI and SP2 keys allow easy access to set points adjustments
- Direct Access Calibration Mode**
 CAL key makes calibration easy! Buffer recognition feature quickens calibration process. Unique 'HOLD' feature freezes relay activity during calibration setup.
- Temperature Compensation**
 Automatic (or Manual) Temperature Compensation with Pt 100 sensor. 3-wire system compensates cable resistance.
- Password Protection**
 Prevent unauthorized or accidental tampering of configuration by password access.
- Dual Setpoints with Independent Hysteresis**
 Two Single Pole Double Throw (SPDT) relays for limit control operations. 'Hysteresis' function prevents relay-chattering and protects peripheral devices
- Galvanically Isolated Output Transmitter**
 pH mode : 0.00 pH – 4 mA & 14.00 pH – 20 mA
 ORP mode : -999 mV – 4 mA & 1000 mV – 20 mA



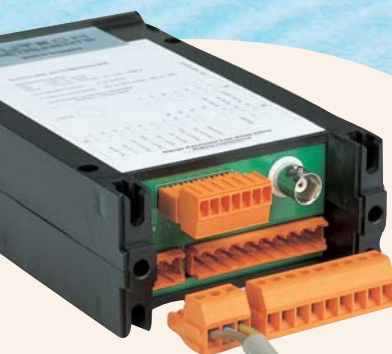
alpha pH/ORP I90

pH/ORP Controller / Transmitter

Simpler Operation! With its advanced microprocessor technology, the alpha pH I90 is an ideal choice for industrial process monitoring and control applications.



- USA / NIST Buffer Options**
 Simply select the appropriate buffer in the calibration mode.
- Symmetrical Mode of Operation**
 Eliminate fluctuating pH/ORP readings due to electrical noise in application tank. (Used in conjunction with the electrode's Potential Matching Pin or PMP).



Switch Mode Power Supply
85 to 260 VAC, 50/60 Hz or DC variable input.

alpha Conductivity and alpha TDS I90

Conductivity and TDS Controller / Transmitter

High Performance! Monitor and control wide varieties of industrial water and waste water applications effectively with the alpha Conductivity and alpha TDS I90 panel mount controller / transmitter.

- Multiple Ranges in a Single Unit**
 Up to 8 different measurement ranges (software selectable). Configurable for a wide range of user applications from pure water to electroplating rinse tank conductivity control.
- High Accuracy in Measurements**
 Up to $\pm 1\%$ of full scale accuracy.
- Selectable Temperature Coefficient (TC)**
 0.0 to 5.0% selectable TC for higher degree of measurement accuracy.



Meter Specifications

alpha pH I90	
pH Range	0.00 to 14.00 pH
Resolution/Accuracy	0.01 / ± 0.01 pH
mV Range	-999 to 1000 mV
Resolution/Accuracy	1 / ± 2.0 mV
Temperature	-10 to 110 °C
Resolution/Accuracy	0.1 / ± 0.5 °C
Sensor	Pt 100 (3-wire)
Temperature Compensation	Automatic / Manual (0 to 100 °C)
Switching Hysteresis	0.00 to 2.00 pH / 0 to 300 mV
pH / ORP Input	BNC ($10^{12} \Omega$ Impedance)

alpha Conductivity I90		
Conductivity Range	Resolution	Cell Constant
0.00 – 20.00 $\mu\text{S/cm}$	0.01 $\mu\text{S/cm}$	0.1
0.0 – 200.0 $\mu\text{S/cm}$	0.1 $\mu\text{S/cm}$	0.1
0.0 – 200.0 $\mu\text{S/cm}$	0.1 $\mu\text{S/cm}$	1
0 – 2000 $\mu\text{S/cm}$	1 $\mu\text{S/cm}$	1
0.00 – 10.00 mS/cm	0.01 mS/cm	1
0.00 – 20.00 mS/cm	0.01 mS/cm	1
0.0 – 200.0 mS/cm	0.1 mS/cm	1
0.0 – 200.0 mS/cm	0.1 mS/cm	10
Relative Accuracy	$\pm 1\%$ of full scale	
Temperature	-10 to 110 °C	
Resolution/Accuracy	0.1 / ± 0.5 °C	
Sensor	Pt 100 (3-wire)	
Temperature Compensation	Automatic / Manual (0 to 50 °C)	
Temperature Coefficient	0.0 to 5.0 %	
Normalisation Temperature	10.0 °C to 30.0 °C	
Switching Hysteresis	0 to 10% of full scale	

alpha TDS I90		
TDS Range	Resolution	Cell Constant
0.00 – 10.00 ppm	0.01 ppm	0.1
0.0 – 100.0 ppm	0.1 ppm	0.1
0.0 – 100.0 ppm,	0.1 ppm	1
0 – 1000 ppm	1 ppm	1
0.00 – 5.00 ppt	0.01 ppt	1
0.00 – 10.00 ppt	0.01 ppt	1
0.0 – 100.0 ppt	0.1 ppt	1
0.0 – 200.0 ppt	0.1 ppt	10
Relative Accuracy	$\pm 1\%$ of full scale	
Temperature	-10 to 110 °C	
Resolution/Accuracy	0.1 / ± 0.5 °C	
Sensor	Pt 100 (3-wire)	
Temperature Compensation	Automatic / Manual (0 to 50 °C)	
TDS Factor	0.40 to 1.0	
Temperature Coefficient	0.0 to 5.0 %	
Normalisation Temperature	10.0 °C to 30.0 °C	
Switching Hysteresis	0 to 10% of full scale	

Common specifications of alpha I90 Series

Set-point And Controller Functions	
Function	Limit Control
Contact Outputs, Controller	2 SPDT relays
Switching Voltage/Current/Power	Max 250 VAC / Max 3A / Max 600 VA
Electrical Data And Connections	
Power Requirements	85 to 260 VAC, 50/60 Hz or DC
Signal Output / Load	4-20 mA galvanically isolated / 200 Ω
Connection Terminals	3 Detachable connectors (3-pin, 7-pin & 9-pin terminal blocks) + 1 Fixed Connector (Conductivity/TDS)
Main Fuse	250 mA, Anti-surge (BUSSMAN S504+250mA)
Environmental Conditions	
Ambient Temp. Operating Range	- 10 to 50 °C
Rel. Humidity	10 to 95 % (non-condensing)
Mechanical Specifications	
Dimensions (Control Panel Housing)	96(W) x 48(H) x 150(D) mm
Weight	300g (350g boxed)

Technical Information

Dimensions (in mm)

