



## Thermo Scientific Alpha COND 190, COND 200, TDS 190 & TDS 200 Conductivity & TDS Controller/Transmitter:

### Conductivity/TDS:

Measure from pure water to electroplating rinse tank water with Thermo Scientific's Alpha COND 190/200 and Thermo Scientific's Alpha TDS 190/200. Reliable with straightforward process control, these control/transmitters measure with up to  $\pm 1\%$  full scale accuracy across eight conductivity/TDS ranges.

For faster and more convenient control, choose the Alpha COND 190 and TDS 190 which allow direct access to the set-point adjustment and calibration menus. For heightened security, use the Alpha COND 200 and TDS 200 with two levels of password security to protect calibration and meter settings from unauthorised tampering.

- Measures up to eight ranges at  $\pm 1\%$  full range accuracy
- Easy push-button calibration. Controller freezes data transmission and relay activities during calibration and maintenance













- Selectable temperature coefficient for higher Conductivity/TDS accuracy
- Two SPDT relays allows high/low set-points limit control. Each relay comes with their independent hysteresis to prevent relay-chattering
- Choice of automatic or manual temperature compensation. Three-wire system compensates error due to cable resistance
- Full-scale 4 to 20 mA galvanically isolated current output for process control
- 85 to 250 VAC. 50/60 Hz or DC variable input allows controller to be used with a wide range of supply voltages

**$\pm 1\%$  full scale accuracy across eight Conductivity/TDS ranges**

## Specification Information

Conductivity/TDS Controller/Transmitter	Alpha COND 190	Alpha COND 200	Alpha TDS 190	Alpha TDS 200
Order Code	TSCONCTP0190	TSCONCTP0200	TSTDCTP0190	TSTDCTP0200
Part No.	01X275214	01X275212	01X275215	01X275213
<b>Conductivity:</b>				
Range:	... to 20.00 µS/cm ; ... to 200.0 µS/cm ; ... to 2000 µS/cm ; ... to 10.00 mS/cm ; ... to 20.00 mS/cm ; ... to 200.0 mS/cm		... to 10.00 ppm ; ... to 100.0 ppm ; ... to 1000 ppm ; ... to 5.00 ppt ; ... to 10.00 ppt ; ... to 100.0 ppt	
Resolution:	0.01 µS/cm ; 0.1 µS/cm ; 1 µS/cm ; 0.01 mS/cm ; 0.1 mS/cm		0.01 ppm ; 0.1 ppm ; 1 ppm ; 0.01 ppt ; 0.1 ppt	
Cell constant:	0.1 ; 1 ; 10			
Relative accuracy:	±1 % of full scale			
<b>Temperature:</b>				
Range:	-10 to 110 °C			
Resolution:	0.1 °C			
Accuracy:	±0.5 °C			
Sensor:	Pt100; 2 or 3 wire			
Compensation:	Auto/manual (0 to 50 °C)			
Coefficient:	0.0 to 5.0 %			
Normalisation:	10.0 °C to 30.0 °C			
<b>TDS:</b>				
Factor:	-		0.40 to 1.0	
<b>Set point &amp; controller functions:</b>				
Set point 1 (SP1) / set point 2 (SP2):	... to 20.00 µS/cm or ... to 200.0 µS/cm or ... to 2000 µS/cm or ... to 10.00 mS/cm or ... to 20.00 mS/cm or ... to 200.0 mS/cm		... to 10.00 ppm or ... to 100.0 ppm or ... to 1000 ppm or ... to 5.00 ppt or ... to 10.00 ppt or ... to 100.0 ppt	
Switching Conductivity hysteresis:	0 to 10 % of full scale			
Switching TDS hysteresis:	0 to 10 % of full scale			
Function:	Limit control			
Contact outputs:	2 SPDT relays			
Switching voltage/current/power:	Max. 250 VAC / max. 3 A / max. 600 VA			
<b>Electrical data &amp; connections:</b>				
Transmitter function:	4 to 20 mA scalable outputs for Conductivity, galvanically isolated			
Load:	200 Ω			
Conductivity/TDS input:	2-pin terminal			
Connection terminal:	3-pin, 7-pin & 9-pin terminal, detachable blocks, 1 fixed connector			
<b>Display:</b>				
LED:	7 segments display			
<b>Power supply:</b>				
Input:	85 to 250 VAC, 50/60 Hz			
Main fuse:	250 mA, anti-surge, S504 Bussman			
Rated input current (max.):	100 mA			
Insulation category:	II			
<b>EMC specifications:</b>				
Emitted interference:	According to EN 61326			
Immunity to interference:	According to EN 61326			
<b>Environmental conditions:</b>				
Operating temperature range:	-10 to 50 °C			
Max. relative humidity:	10 to 95 % (non-condensing)			
<b>Mechanical specifications:</b>				
Dimensions (WxHxD):	96 x 48 x 150 mm			
Weight:	300 g (unit) / 350 g (packed)			
Ingress protection:	IP50			

## Conductivity Electrodes

Order Code	ECCONSEN88X	ECCS10-0-1S	ECCS10-0-1SSP	ECCONSEN89X	ECCS10-1-0S	ECCS10-1-0SSP
Part No.	93X272101	93X219020	93X219055	93X272102	93X219021	93X219056
<b>Conductivity Electrodes</b>						
						
<b>Conductivity range</b>	0.01 to 2 mS/cm	0.5 to 200 µS/cm		0.1 to 200 µS/cm	0.01 to 100 mS/cm	0.01 to 200 mS/cm
<b>Cell constant, K</b>	1.0, 2-cell	0.1, 2-cell			1.0, 2-cell	
<b>Temperature sensor</b>	Pt100, 3-wire					
<b>Pressure rating at 25 °C</b>	1 bar (14 psi)	3.4 bar (50 psi)	6.8 bar (100 psi)	1 bar (14 psi)	3.4 bar (50 psi)	6.8 bar (100 psi)
<b>Operating temperature</b>	-5 to 50 °C / 23 to 122 °F		-5 to 150 °C / 23 to 302 °F	-5 to 50 °C / 23 to 122 °F		-5 to 120 °C / 23 to 248 °F
<b>Material</b>	Graphite	SS316		Graphite	SS316	
<b>Fitting material</b>	Nylon plastic		Stainless steel	Nylon plastic		Stainless steel
<b>Thread</b>	½" NPT					
<b>Cable</b>	Integrated 7.5 m (24.6 ft), 6-wire double-shielded, tinned ends					
<b>Dimensions</b>	<b>Length</b>	132 mm (excludes cable)	168 mm (excludes cable)	132 mm (excludes cable)	168 mm (excludes cable)	
	<b>Diameter</b>	12 mm (external)	12.8 mm (external)	12 mm (external)	12.8 mm (external)	
<b>Weight</b>	316 g	560 g	660 g	316 g	590 g	660 g

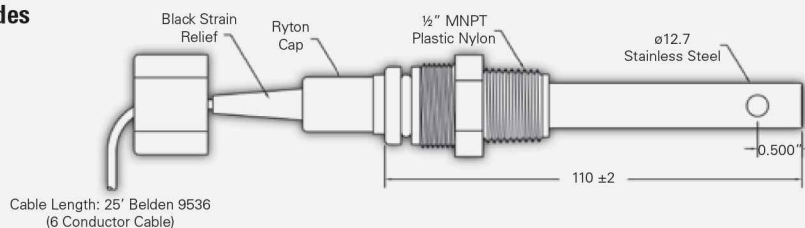
## Electrode Selection Guide

Conductivity Electrodes	ECCONSEN88X 93X272101	ECCS10-0-1S 93X219020	ECCS10-0-1SSP 93X219055	ECCONSEN89X 93X272102	ECCS10-1-0S 93X219021	ECCS10-1-0SSP 93X219056
<b>General Conductivity measurements</b>	•	•	•	•	•	•
<b>Low Conductivity measurements</b>		•	•	•		•
<b>Conductivity measurements with ATC</b>	•	•	•	•	•	•
<b>Conductivity measurements of boiler water</b>			•			
<b>Conductivity measurements of power plant &amp; condensate water</b>	•	•	•	•	•	•

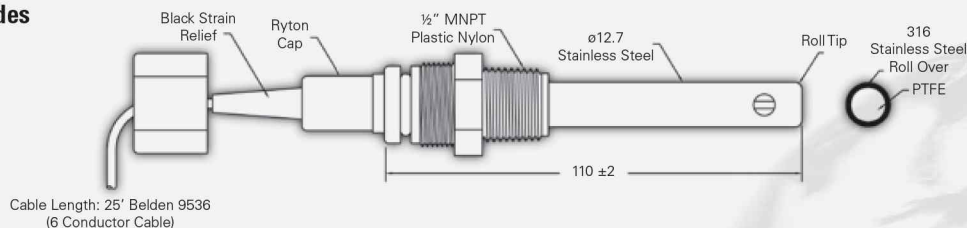


**Line Diagram** (All dimensions are in mm unless specified otherwise)

**Conductivity Electrodes**  
ECCS10-0-1S



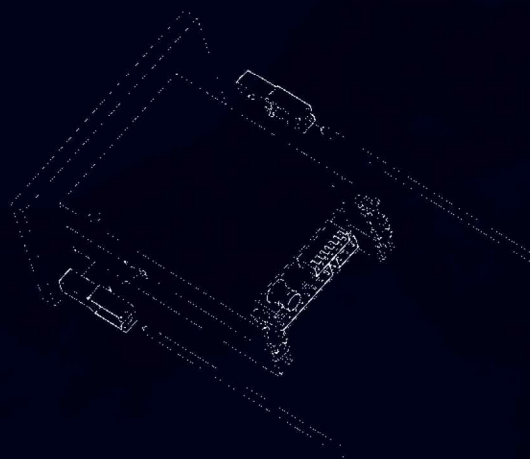
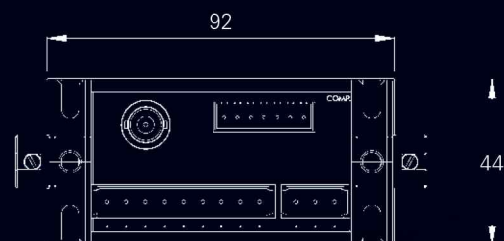
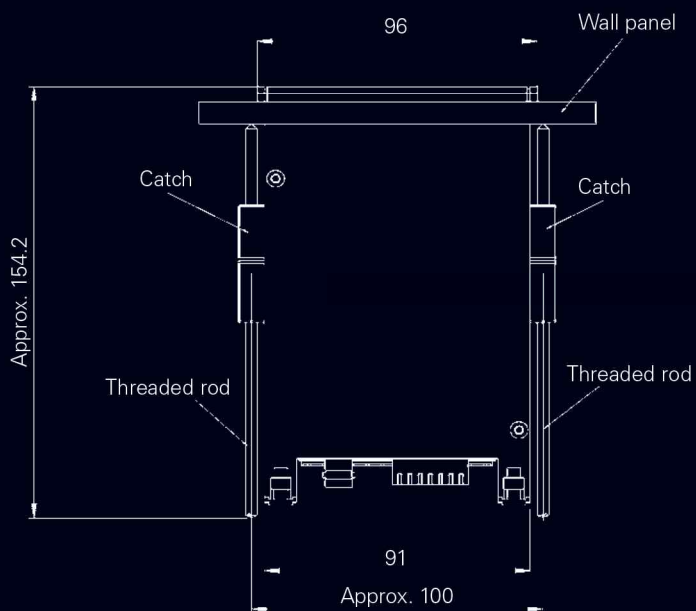
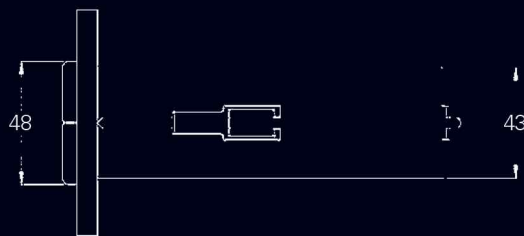
**Conductivity Electrodes**  
ECCS10-1-0S



**Ordering Information**

Order Code	Part Number	Description
TSCONCTP0190	01X275214	Alpha COND 190 panel-mount Conductivity controller/transmitter. Incl. terminal blocks, threaded rods, catch, etc
TSCONCTP0200	01X275212	Alpha COND 200 panel-mount Conductivity controller/transmitter. Incl. terminal blocks, threaded rods, catch, etc
TSTDCTP0190	01X275215	Alpha TDS 190 panel-mount TDS controller/transmitter. Incl. terminal blocks, threaded rods, catch, etc
TSTDCTP0200	01X275213	Alpha TDS 200 panel-mount TDS controller/transmitter. Incl. terminal blocks, threaded rods, catch, etc
ECCONSEN88X	93X272101	Conductivity graphite 2-ring epoxy-body electrode with Pt100, cell constant K=1.0, 7.5 m tinned open-ended cable (COND 200/TDS 200)
ECCS10-0-1S	93X219020	Conductivity electrode with Pt100, cell constant K=0.1, stainless steel with 25 ft tinned open-ended cable (with 1/2 inch nylon plastic cap threading)
ECCS10-0-1SSP	93X219055	Conductivity electrode with Pt100, cell constant K=0.1, stainless steel with PEEK insert and 25 ft tinned open-ended cable (with 1/2 inch stainless steel cap threading)
ECCONSEN89X	93X272102	Conductivity graphite 2-ring epoxy-body electrode with Pt100, cell constant K=0.1, 7.5 m tinned open-ended cable (COND 200/TDS 200)
ECCS10-1-0S	93X219021	Conductivity electrode with Pt100, cell constant K=1.0, stainless steel with 25 ft tinned open-ended cable (with 1/2 inch nylon plastic cap threading)
ECCS10-1-0SSP	93X219056	Conductivity electrode with Pt100, cell constant K=1.0, stainless steel with PEEK insert and 25 ft tinned open-ended cable (with 1/2 inch stainless steel cap threading)
ECAC021022	81X220803	CPVC electrode tee for Conductivity/Resistivity electrodes with 1/2" to 1" adapter

# Panel Mount – 1/8 DIN (in mm)



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Kynar® is a registered trademark of Arkema Inc.  
Ryton® is a registered trademark of Chevron  
Phillips Chemical Company LLC.

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**Warranty:**

Thermo Fisher Scientific provides one year of warranty against manufacturing defects for meters, and six months for electrodes.

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**Disclaimers:**

Specifications and terms are subject to change.  
Not all products are available in all countries.  
Please consult your local sales representative  
for details.

All drawings and diagrams are for illustration  
purposes only and are not drawn to scale.

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