

# Signet 8860 Two-Channel Conductivity/Resistivity Controller



Member of the ProcessPro® Family of Instruments



The Signet 8860 Two-Channel Conductivity/Resistivity Controller is packed with a set of features and capabilities ideal for the real needs of water treatment applications. It accommodates two separate and independent input sources and can be powered with AC/DC voltage. The 8860 programs via a simple and intuitive menu system. The unit can also be programmed to measure a raw conductivity value by turning off the temperature compensation mode.

To control the process, the 8860 is equipped with four dry contact relays and three 4 to 20 mA output loops. Calculated measurement include Difference, Ratio or % Rejection. Two of the relays may be converted into open collector outputs with the flip of a switch. Operating modes for the relays and open collector outputs are high, or low alarm, pulse, or special USP alarm mode. The 8860 is offered with a NEMA 4X/IP65 front panel with a self-healing window in a 1/4 DIN package for easy panel installation.

## Features

- Meets USP requirements for measuring raw conductivity, USP alarm mode
- Dual sensor input
- AC or DC powered
- Display and/or control:  $\mu\text{S}$ , mS, PPM or PPB (TDS), k $\Omega$ , M $\Omega$ , % rejection, difference, ratio,  $^{\circ}\text{C}$  or  $^{\circ}\text{F}$
- Three fully scaleable 4 to 20 mA outputs
- Two open collector outputs
- Four programmable relays
- Time delay relay function
- Proportional pulse control capability
- Compatible with ALL Signet conductivity electrodes
- Programmable temperature compensation
- NEMA 4X/IP65



## Applications

- RO/DI System Control
- Demineralizer Regeneration and Rinse
- Scrubber, Cooling Tower & Boiler Protection
- Chemical Concentration
- Rinse Tank Water Quality
- Desalination
- Leak Detection
- Aquatic Animal Life Support Systems
- Aquaculture
- Environmental Studies

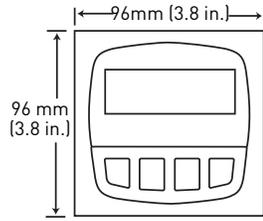


Tel: +44 (0) 1706 869777  
E-mail: [sales@desal.co.uk](mailto:sales@desal.co.uk)  
Web: [www.desal.co.uk](http://www.desal.co.uk)

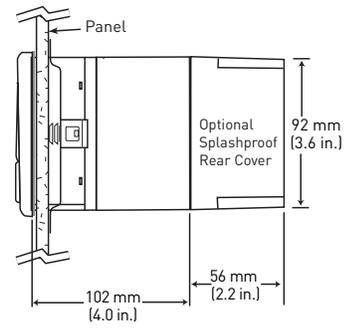
# Specifications

General			
Compatible Electrodes	All Signet conductivity/resistivity electrodes		
Operating Range			
	Conductivity	0.055 to 400,000 $\mu\text{S}/\text{cm}$	
	Resistivity	10 $\text{K}\Omega\cdot\text{cm}$ to 18.2 $\text{M}\Omega\cdot\text{cm}$	0.055 to 100 $\mu\text{S}/\text{cm}$
	TDS	0.001 to 999999 ppm or ppb (display limit)	
	Temperature	PT1000: -25 $^{\circ}\text{C}$ to 120 $^{\circ}\text{C}$	-13 $^{\circ}\text{F}$ to 248 $^{\circ}\text{F}$
Accuracy			
	Conductivity/Resistivity	$\pm 2\%$ of reading	
	Temperature	$\pm 0.5$ $^{\circ}\text{C}$	
Materials			
Case	PBT		
Keypad	Sealed 4-key silicone rubber		
Window	Polyurethane coated polycarbonate		
Electrical			
Power Requirements			
	3-8860-AC	100 to 240 VAC $\pm 10\%$ , regulated 50-60 Hz, 20 VA	
	3-8860	12 to 24 VDC $\pm 10\%$ , regulated, 0.5 A max.	
Display	Alphanumeric 2 x 16 LCD		
Contrast	User selected, 5 levels		
Update Rate	1.5 seconds		
<b>Current Outputs</b>	(3 each) 4 to 20 mA, isolated, passive, fully adjustable and reversible		
Max. Loop Impedance	150 $\Omega$ @ 12 V		
	450 $\Omega$ @ 18 V		
	750 $\Omega$ @ 24 V		
Update Rate	Approx. 100 mS		
Accuracy	$\pm 0.03$ mA @ 25 $^{\circ}\text{C}$ , 24 VDC		
<b>Open-Collector Outputs</b>	(2 each) Isolated, 50 mA sink or source, 30 VDC max. with pull-up resistor		
Operational Settings	High, Low, USP, Pulse, Off		
Hysteresis	User adjustable		
Time Delay	0 to 6400 seconds		
Maximum Pulse Rate	400 pulses/min		
<b>Alarm Contacts</b>	(up to 4 each) SPDT relays		
Max. Voltage Ratings	5 A @ 30 VDC or 5 A @ 250 VAC		
Operational Settings	High, Low, USP, Pulse, Off		
Hysteresis	User adjustable		
Time Delay	0 to 6400 seconds		
Maximum Pulse Rate	400 pulses/min.		
Environmental			
Operating Temperature	-10 $^{\circ}\text{C}$ to 55 $^{\circ}\text{C}$	14 $^{\circ}\text{F}$ to 131 $^{\circ}\text{F}$	
Storage Temperature	-15 $^{\circ}\text{C}$ to 80 $^{\circ}\text{C}$	5 $^{\circ}\text{F}$ to 176 $^{\circ}\text{F}$	
Relative Humidity	0 to 95%, non-condensing		
Maximum Altitude	2,000 m (6,560 ft)		
Enclosure	NEMA 4X/IP65 (front face only)		
Shipping Weight			
	8860-AC	0.581 kg	1.3 lb
	8860	0.544 kg	1.2 lb
Standards and Approvals			
	CE, UL, CUL		
	RoHS compliant, China RoHS		
	Manufactured under ISO 9001 for Quality and ISO 14001 for Environmental Management and OHSAS 18001 for Occupational Health and Safety		

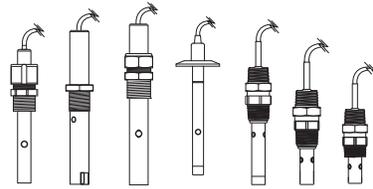
# Dimensions



Front View



Side View

System Overview	<b>Panel Mount</b>	
	<p><b>Signet 8860 Conductivity/Resistivity Controller</b></p> 	
	<p>Signet Electrodes 2818-2823 2839-2842</p> 	
	<p>Note: Submersible installation not applicable for Sanitary Electrode. <span style="float: right;">All sold separately</span></p>	
<p>In-line Installation - Customer supplied fittings</p>	<p>Submersible Installation - Customer supplied pipe extension or conduit with with 3/4 in. FNPT threads*</p> 	

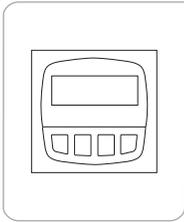
\*Refer to the Signet Submersion brochure located in the K-Factors Fittings and More Kit (3-0000-709) for installation suggestions and options.

## Ordering Notes

- 1) An optional splashproof rear cover can be ordered separately if needed.
- 2) Use the heavy duty wall mount bracket to mount instrument on a wall
- 3) Order RC filter kits to protect relays from voltage spikes.

Please refer to **Wiring, Installation, and Accessories** sections for more information.

## Ordering Information



Mfr. Part No.	Code	Description	Power
Two-channel Conductivity/Resistivity Controller			
3-8860	<b>159 000 677</b>	with three 4 to 20 mA outputs and 4 relays or 2 relays with 2 open collectors (switch selectable)	12 to 24 VDC
3-8860-AC	<b>159 000 678</b>	with three 4 to 20 mA outputs and 4 relays or 2 relays with 2 open collectors (switch selectable)	100 to 240 VAC

## Accessories and Replacement Parts

Mfr. Part No.	Code	Description
<b>Mounting</b>		
3-8050.395	<b>159 000 186</b>	Splashproof rear cover (panel mount only)
3-8050.392	<b>159 000 640</b>	¼ DIN retrofit adapter
3-5000.399	<b>198 840 224</b>	5 x 5 in. adapter plate to retrofit older Signet installations
3-0000.596	<b>159 000 641</b>	Heavy duty wall mount bracket (panel mount only)
3-5000.598	<b>198 840 225</b>	Surface mount bracket (panel mount only)
3-9900.396	<b>159 001 701</b>	Angle adjustment adapter kit
<b>Liquid Tight Connectors</b>		
3-9000.392	<b>159 000 368</b>	Liquid tight connector kit for rear cover (3 connectors)
3-9000.392-1	<b>159 000 839</b>	Liquid tight connector kit, NPT (1 connector)
3-9000.392-2	<b>159 000 841</b>	Liquid tight connector kit, PG 13.5 (1 connector)
<b>Other</b>		
3-8050.396	<b>159 000 617</b>	RC filter kit (for relay use), 2 per kit