

Signet 8860 Two-Channel Conductivity/Resistivity Controller



Member of the ProcessPro® Family of Instruments



**Not recommended for new designs,
please see the 9950 Transmitter**

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: μS , mS, PPM or PPB (TDS), k Ω , M Ω , % 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



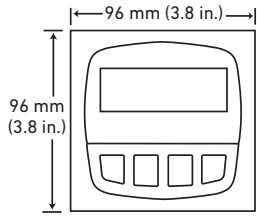
Applications

- 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

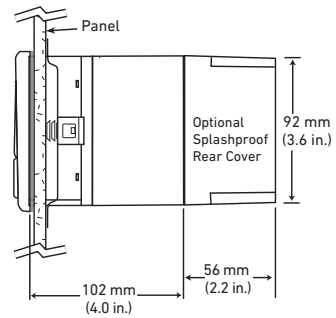
Specifications

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 °C to 120 °C	-13°F to 248°F
Accuracy			
	Conductivity/Resistivity	$\pm 2\%$ of reading	
	Temperature	± 0.5 °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		
Current Outputs	(3 each) 4 to 20 mA, isolated, passive, fully adjustable and reversible		
Maximum Loop Impedance	150 Ω @ 12 V 450 Ω @ 18 V 750 Ω @ 24 V		
Update Rate	Approx. 100 mS		
Accuracy	± 0.03 mA @ 25 °C, 24 VDC		
Open-Collector Outputs	(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		
Alarm Contacts	(up to 4 each) SPDT relays		
Maximum 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 °C to 55 °C	14 °F to 131 °F	
Storage Temperature	-15 °C to 80 °C	5 °F to 176 °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, FCC, UL, CUL		
	RoHS compliant, China RoHS		
	Manufactured under ISO 9001, ISO 14001 and ISO 45001		

Dimensions



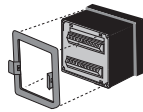
Front View



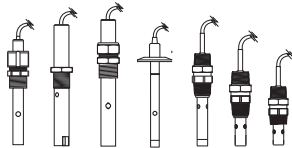
Side View

Panel Mount

Signet 8860 Conductivity/Resistivity Controller



Signet Electrodes
 - 2818-2823
 - 2839-2842



Note: Submersible installation not applicable for Sanitary Electrode.

All sold separately

In-Line Installation -
 Customer supplied fittings

Submersible Installation -
 3-8050 Universal Mount Kit
 or 3-8052 Integral Mount Kit
 and Pipe extension or conduit
 with 3/4 in. FNPT threads*



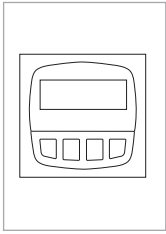
*Refer to the Signet Submersion Kit brochure (3-0000.707) located on our website for installation suggestions and options.

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	159 000 677	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	159 000 678	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
Mounting		
3-8050.395	159 000 186	Splashproof Rear Cover (panel mount only)
3-8050.392	159 000 640	¼ DIN Retrofit Adapter
3-5000.399	198 840 224	Panel Adapter, 5 x 5 in. to ¼ DIN
3-0000.596	159 000 641	Heavy Duty Wall Mount Bracket (panel mount only)
3-5000.598	198 840 225	Surface Mount Bracket (panel mount only)
Liquid Tight Connectors		
3-9000.392	159 000 368	Liquid Tight Connector kit for rear cover (3 connectors)
3-9000.392-1	159 000 839	Liquid Tight Connector kit, NPT (1 connector)
3-9000.392-2	159 000 841	Liquid Tight Connector kit, PG 13.5 (1 connector)
Other		
3-8050.396	159 000 617	RC Filter Kit (for relay use), 2 per kit