

Signet 8860 Two-Channel Conductivity/Resistivity Controller

Member of the ProcessPro® Family of Instruments



Features

- Meets USP requirements for measuring raw conductivity, USP alarm mode
- Dual sensor input
- AC or DC powered
- Display and/or control: μ S, mS, PPM or PPB (TDS), $k\Omega$, $M\Omega$, % rejection, difference, ratio, $^{\circ}$ C or $^{\circ}$ 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

Description

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 20mA 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.

System Overview

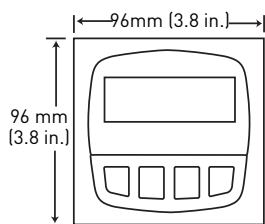
<p>In-Line Sensor Installation</p> <p>Panel Mount Signet 8860 Conductivity/Resistivity Controller</p>	<p>Submersible Sensor Installation</p> <p>Panel Mount Signet 8860 Conductivity/Resistivity Controller</p> <p>Pipe extension or conduit with 3/4 in. FNPT threads (customer supplied)</p>
<p>Signet Conductivity Electrode (sold separately)</p> <p>Note: Submersible installation not applicable for Sanitary Conductivity Electrode.</p>	
<p>In-Line Installation - Fittings (Customer supplied)</p>	

Applications

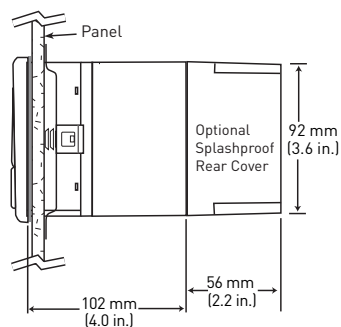
- RO/DI System Control
- Demineralizer Regeneration and Rinse
- Scrubber, Cooling Tower & Boiler Protection
- Chemical Concentration
- Rinse Tank Water Quality
- Desalination
- Leak Detection
- Aquatic Animal Life Support Systems
- Aquaculture
- Environmental Studies



Dimensions



Front View



Side View

Model 8860 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.

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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
- Window: Polyurethane coated polycarbonate
- Keypad: Sealed 4-key silicone rubber

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
- Max. 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

Electrical (continued)

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

- 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

Ambient 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

Max. Altitude: 2,000 m (6,560 ft)

Enclosure: NEMA 4X/IP65 front

Shipping Weight

- 8860-AC: Approx. 0.581 kg 1.3 lb
- 8860: Approx. 0.544 kg 1.2 lb

Standards and Approvals

- CE, UL, CUL
- RoHS compliant
- Manufactured under ISO 9001 for Quality and ISO 14001 for Environmental Management

Ordering Information

Instrument Part Number	
3-8860	Two-channel Conductivity/Resistivity Controller with three 4 to 20 mA outputs and 4 relays or 2 relays with 2 open collectors (switch selectable)
	Power - Choose One
	- 12 to 24 VDC
	-AC 100 to 240 VAC
3-8860	-AC Example Part Number

Mfr. Part No.	Code
3-8860	159 000 677
3-8860-AC	159 000 678

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	5 x 5 in. adapter plate to retrofit older Signet installations
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
3-2830	159 000 628	Conductivity Certification Tool (see individual product page for more information)