

Signet 8860 Two-Channel Conductivity/Resistivity Controller

Member of the ProcessPro® Family of Instruments



Features

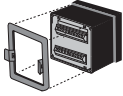



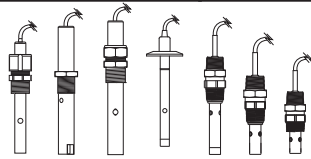
- Meets USP requirements for measuring raw conductivity, USP alarm mode
- Dual sensor input
- AC or DC powered
- Display and/or control: μ S, mS, PPM or PPB (TDS), $k\Omega$, $M\Omega$, % rejection, difference, ratio, $^{\circ}$ C or $^{\circ}$ F
- Three fully scaleable 4 to 20 mA outputs
- Two open 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

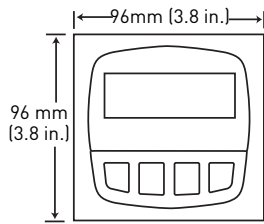
| | |
|--|---|
| <p>In-Line Sensor Installation</p> <p>Panel Mount Signet 8860 Conductivity/Resistivity Controller</p>   | <p>Submersible Sensor Installation</p> <p>Panel Mount Signet 8860 Conductivity/Resistivity Controller</p>  <p>Pipe extension or conduit with 3/4 in. FNPT threads (customer supplied)</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

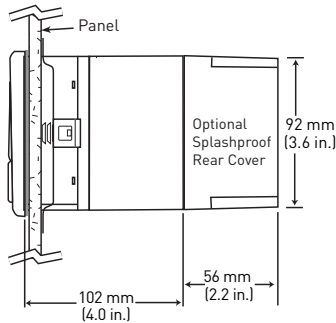
- RO/DI System Control
- Demineralizer Regeneration and Rinse
- Scrubber, Cooling Tower & Boiler Protection
- Chemical Concentration
- Rinse Tank Water Quality
- Desalination
- Leak Detection
- Aquatic Animal Life Support Systems
- Aquaculture
- Environmental Studies



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.

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 | 1/4 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) |