Signet 2839-2842 Conductivity Electrodes

2839-1

2840-1

2841-1
2842-1

Features

- **Dual-threaded**
- **Compact electrode length for easy in-line installation in small pipe sizes**
- **Triple orifice flow-through design reduces clogging and bubble entrapment**
- **316SS electrodes with injection molded PEEK™ process connections and insulators**
- **Cell constants may be traceable to NIST and certified to within ±1% of value - meets USP requirements**

Description

The Signet 2839-2842 Conductivity/Resistivity Electrodes are available in four cell constants from 0.01 to 10.0 cm^{-1}, and are suitable for a wide variety of applications from high purity water quality monitoring to weak acids and bases. 316SS electrode surface finishes are controlled in a precision bead blasting operation to ensure measurement accuracy and repeatability. The PEEK™ insulator and process connections are injection over-molded to minimize variance between electrodes. Double threaded connections in either 3/4 in. NPT or ISO 7/1-R 3/4 enable quick and easy installation in submersible or in-line configurations. Transmitter integral mounting kit and junction boxes are available as accessories.

CE

Applications

- **Water Treatment & Water Quality Monitoring**
- **Reverse Osmosis**
- **Deionization**
- **Cooling tower and Boiler Protection**
- **Distillation**
- **Desalination**
- **Demineralizer**
- **Semiconductor**
- **Aquatic Animal Life Support Systems**

System Overview

In-Line Installation

Panel Mount
Signet Conductivity Instrument (sold separately)
8850 8860 5800CR

Signet 2839-2842 Conductivity Electrodes

Pipe, Tank, Wall Mount
Signet 8850 Conductivity Instrument (sold separately)

Signet Universal Adapter Kit (3-8050) (sold separately)

Signet 2839-2842 Conductivity Electrodes

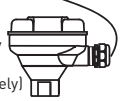
Integral Mount
Signet 8850 Conductivity Instrument (sold separately)

Signet Integral Adapter Kit (3-8052) (sold separately)

Signet 2839-2842 Conductivity Electrodes

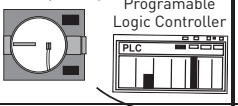
Multi-Parameter Panel Mount
Signet 8900 Instrument (sold separately)

Signet 2850 In-Line Conductivity Sensor (sold separately)

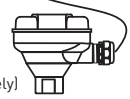


Signet 2839-2842 Conductivity Electrodes

4 to 20mA Input
Chart Recorder (sold separately) **OR** Programable Logic Controller



Signet 2850 In-Line Conductivity Sensor (sold separately)



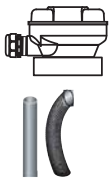
Signet 2839-2842 Conductivity Electrodes

Submersible Installation

Panel, Pipe, Tank, Wall Mount

Signet Conductivity Instrument
8850 8860 8900 5800CR

Pipe extension or conduit with 3/4 in. FNPT threads (customer supplied) **AND/OR** Signet 2850 Submersible Conductivity Sensor



Signet 2839-2842 Conductivity Electrodes

Fittings - Customer supplied, 3/4 in. NPT or ISO threaded

Specifications

General

Range:

- 2839:
  0.055 to 100µS (18.2MΩ to 10KΩ)
  (0.02 to 50 ppm)
- 2840:
  1 to 1,000µS (1MΩ to 1KΩ)
  (0.5 to 500 ppm)
- 2841:
  10 to 10,000µS (5 to 5,000 ppm)
- 2842:
  100 to 200,000µS (50 to 100,000 ppm)

Accuracy:
±2% of cell constant value (standard). Cell constants can be traceable to NIST and certified to within ±1% of value (contact factory)

Dual-threaded process connection:

- -1 versions: 3/4 in. NPT
- -1D versions: ISO 7/1-R3/4

Cable:

- 4.6 m/15 ft, 3-cond. w/shield (standard)
- 30m/100 ft (maximum)

Temperature element: PT-1000
Temp. response, τ:

- 5 sec. (0.01 cell)
- 10 sec. (0.10 cell)
- 20 sec. (1.0 cell)
- 30 sec. (10.0 cell)

Temp. accuracy: ±0.5°C (±0.9°F)

Wetted Materials

- Internal O-ring (2841 and 2842): FPM
- Insulator material: PEEK™
- Electrode material: 316SS
- Threaded process connection: PEEK™

Max. Pressure/Temperature Ratings

Operating temperature/pressure:

- -10°C to 100°C @ 6.9 bar
  (14°F to 212°F @ 100 psi)
- -10°C to 131°C @ 2.76 bar
  (14°F to 268°F @ 40 psi)

Storage temperature:
-20°C to 131°C (-4°F to 268°F)

See page Temperature and Pressure graphs for more information.

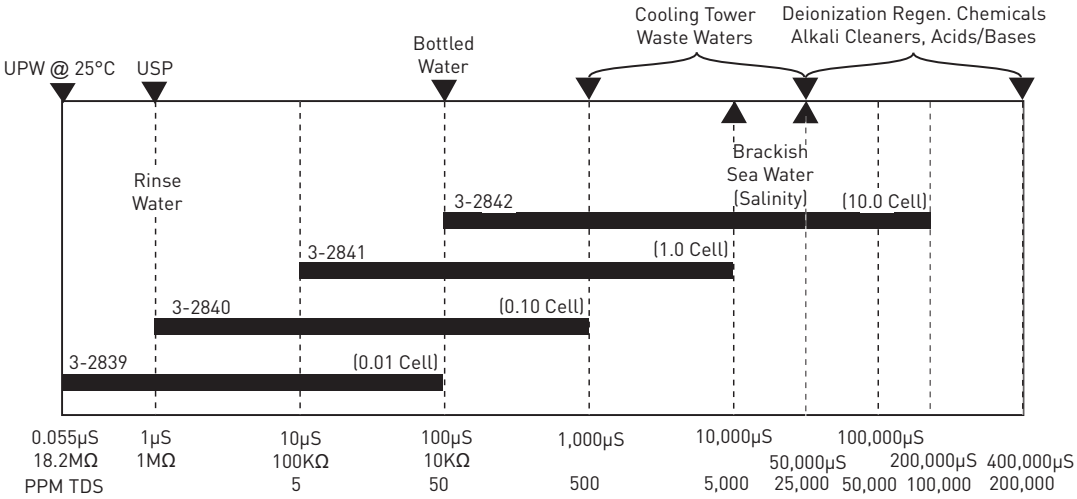
Shipping Weight

- 2839: 0.34 kg (0.74 lb)
- 2840, 2841, 2842: 0.30 kg (0.66 lb)

Standards and Approvals

- CE
- Manufactured under ISO 9001:2000 for Quality and ISO 14001:2004 for Environmental Management

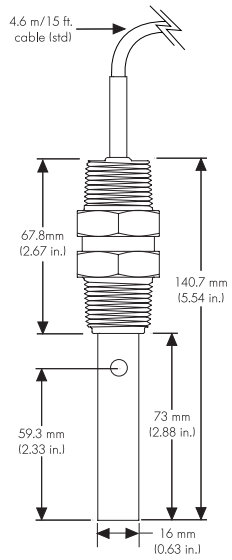
Operating Range Chart



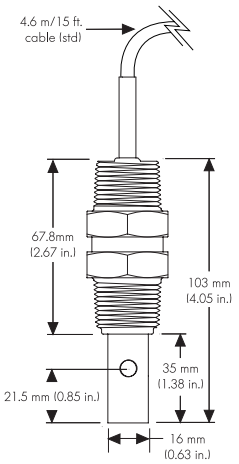
Dimensions

Dual-Threaded Electrodes

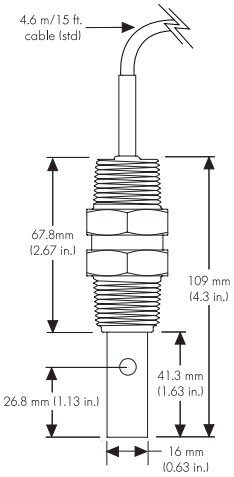
3-2839-1 (0.01 cell)



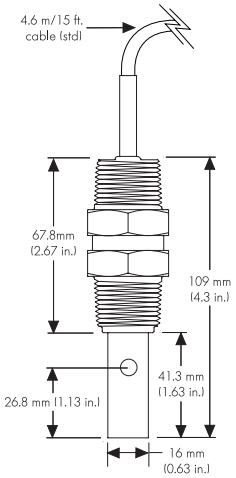
3-2840-1 (0.1 cell)



3-2841-1 (1.0 cell)*



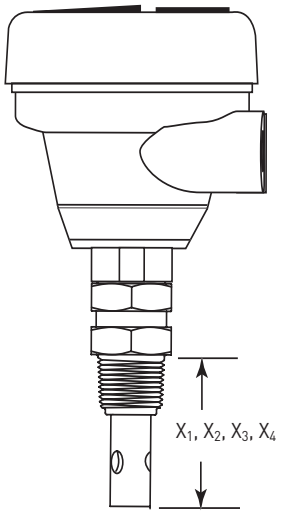
3-2842-1 (10.0 cell)*



* Although these electrodes look similar in design, there is an inherent difference. From the bottom view, the 2841 electrode features a simple plastic insert. However, the 2842 electrode features a complex plastic insert with four holes through which liquid flows.

Integral Mount Sensor

The 2839-2842 Dual Threaded Conductivity Electrodes can be directly mounted to an integral version transmitter, using the 8052 Integral Mount Kit.



X1 (3-2839-1) = 73mm (2.88 in.)
X2 (3-2840-1) = 35mm (1.38 in.)
X3 (3-2841-1) = 41.3mm (1.63 in.)

+GF+

Model 2839-2842
Ordering Notes:

1) Cell constants can be traceable to NIST and certified within ±1% of value (contact factory).
2) The Conductivity Certification tools are compatible with the following Signet Instrument:
   5800CR 8860
   5900 8900
   8850
3) Threaded sensors can be directly mounted to an instrument by doing the following:

- Order integral adapter 3-8052 to connect the sensor to an instrument
- Order an instrument designed for integral mounting: 3-8850-1, 3-8850-2, 3-8850-3

4) Alternate wetted materials and sensor lengths are available through special order.
5) The sensor cable can be extended up to 30m (100 ft.)

Example of NIST Traceability Certificate available through special order.

CERTIFICATE

Date: November 10, 2003	
Sensor Part Number:	3-2839-1
Sensor Serial Number:	980159-04
Sensor Cell Constant:	0.0098
Temp. Element Offset:	0.1°C
Measured at:	24.8°C

NIST Certified

Application Tips:

- Liquid levels must be high enough to cover orifice on sensor body.
- Install sensors in an area that will remain free of air bubbles and sediment build-up.
- Conductivity measurements are affected if electrodes are coated by process substances.
- Use Model 2839 with the 2850/8900 for low conductivity applications requiring multiple measuring points.

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

Ordering Information

Sensor Part Number			
3-2839	0.01 cm-1 cell constant		
3-2840	0.1 cm-1 cell constant		
3-2841	1.0 cm-1 cell constant		
3-2842	10 cm-1 cell constant		
	Sensor Style - Choose one		
	-1	Dual threaded connection with 4.6m (15 ft.) cable; for use with Models 8850, 8860, 5800CR, and 5900 Conductivity Instruments	
		Thread Size(s) - Choose one	
		-	3/4 inch NPT
		D	ISO 7/1-R 3/4
			Other options available on special order
			NIST Traceable and certified within +/- 1% of the value (contact factory)
			Cable length extensions of up to 30m (100 ft) are available. For resistivity measurements above 10 MΩ, the maximum cable length is 7.6m (25ft) - consult factory
3-2840	**-1**	**D**	**Example Part Number**

Mfr. Part No.	Code
3-2839-1	**159 000 921**
3-2839-1D	**159 000 923**
3-2840-1	**159 000 786**
3-2840-1D	**159 000 788**

Mfr. Part No.	Code
3-2841-1	**159 000 790**
3-2841-1D	**159 000 792**
3-2842-1	**159 000 794**
3-2842-1D	**159 000 796**

Accessories and Replacement Parts

Mfr. Part No.	Code	Description
3-2830	**159 000 628**	Conductivity certification tool; simulates 1µS/cm and 2.5µS/cm
3-2842.390	**159 000 925**	2842 replacement insulator, PEEK™ with FPM O-ring
3-8052	**159 000 188**	3/4 in. integral mounting kit