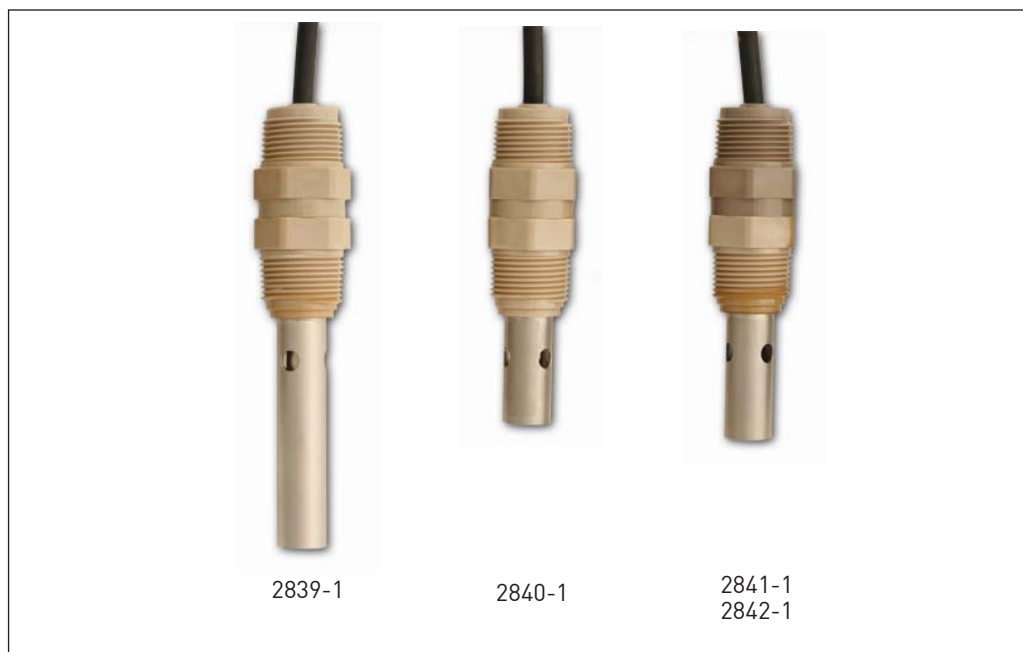


Signet 2839-2842 Conductivity Electrodes



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
- 316 SS 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. 316 SS electrode surface finishes are controlled in a precision bead blasting operation to ensure measurement accuracy and repeatability.





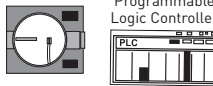



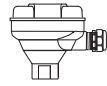
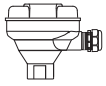



The PEEK™ insulator and process connections are injection over-molded to minimize variance between electrodes. Double threaded connections in either 3/4 in. NPT or ISO 7/1-R 3/4 enable quick and easy installation in submersible or in-line configurations. Transmitter integral mounting kit and junction boxes are available as accessories.

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					Submersible Installation	
Panel Mount Signet Conductivity Instrument (sold separately) 8850 8860 5800CR 	Pipe, Tank, Wall Mount Signet 8850 Conductivity Instrument (sold separately) 	Integral Mount Signet 8850 Conductivity Instrument (sold separately) 	Multi-Parameter Panel Mount Signet 8900 Instrument (sold separately) 	4 to 20 mA Input Chart Recorder (sold separately) OR Programmable Logic Controller 	Panel, Pipe, Tank, Wall Mount Signet Conductivity Instrument 8850 8860 8900 5800CR 	
	Signet Universal Adapter Kit (3-8050) (sold separately) 	Signet Integral Adapter Kit (3-8052) (sold separately) 	Signet 2850 In-Line Conductivity Sensor (sold separately) 	Signet 2850 In-Line Conductivity Sensor (sold separately) 	Signet 2850 Submersible Conductivity Sensor AND/OR Pipe extension or conduit with 3/4 in. FNPT threads (customer supplied) 	
Signet 2839-2842 Conductivity Electrodes 				Signet 2839-2842 Conductivity Electrodes 		
In-Line Installation - Fittings, 3/4 in. NPT or ISO threaded (Customer supplied)						

Specifications

General

Operating Range:

- 2839:
0.055 to 100 μ S (18.2 M Ω to 10 K Ω)
(0.02 to 50 ppm)
- 2840:
1 to 1,000 μ S (1 M Ω to 1 K Ω)
(0.5 to 500 ppm)
- 2841:
10 to 10,000 μ S (5 to 5,000 ppm)
- 2842:
100 to 200,000 μ S (50 to 100,000 ppm)

Cell Constant Accuracy:

- $\pm 2\%$ of cell constant value (standard).
Cell constants can be traceable to NIST and certified to within $\pm 1\%$ of value (contact factory)

Dual-Threaded Process Connection:

- -1 versions: $\frac{3}{4}$ in. NPT
- -1D versions: ISO 7/1-R 3/4

Cable:

- 4.6 m/15 ft, 3-cond. w/shield (standard)
- 30 m/100 ft (maximum) for 0.1, 1.0 and 10.0 cells
- 15 ft maximum for 0.01 cells

Temperature Element: PT1000

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 $^{\circ}$ C (± 0.9 $^{\circ}$ F)

Wetted Materials

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

Max. Temperature/Pressure Ratings

Operating temperature/pressure:

- -10 $^{\circ}$ C to 100 $^{\circ}$ C @ 6.9 bar
(14 $^{\circ}$ F to 212 $^{\circ}$ F @ 100 psi)
- -10 $^{\circ}$ C to 131 $^{\circ}$ C @ 2.76 bar
(14 $^{\circ}$ F to 268 $^{\circ}$ F @ 40 psi)

Storage temperature:

- -20 $^{\circ}$ C to 131 $^{\circ}$ C [-4 $^{\circ}$ F to 268 $^{\circ}$ F]

See Temperature and Pressure graphs for more information.

Shipping Weight

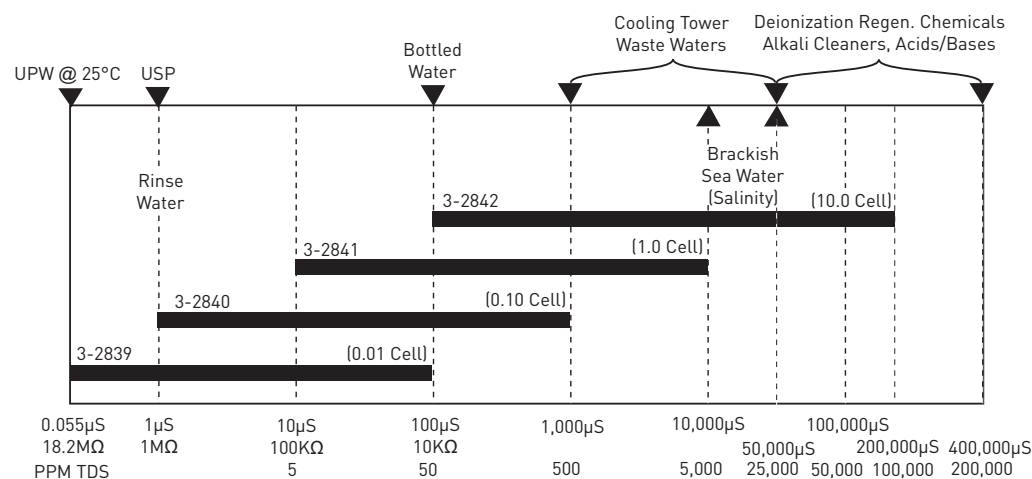
- 2839: 0.34 kg 0.74 lb
- 2840, 2841, 2842: 0.30 kg 0.66 lb

Standards and Approvals

- RoHS compliant
- Manufactured under ISO 9001 for Quality and ISO 14001 for Environmental Management

Conductivity/
Resistivity

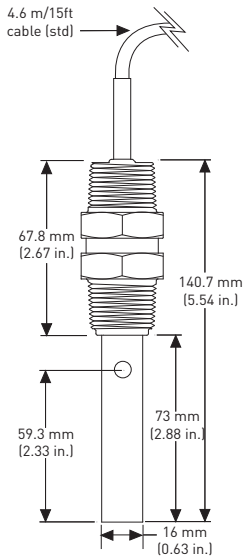
Operating Range Chart



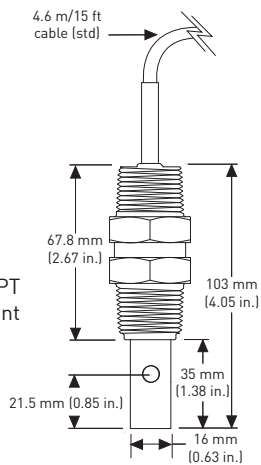
Dimensions

Dual-Threaded Electrodes

3-2839-1 (0.01 cell)

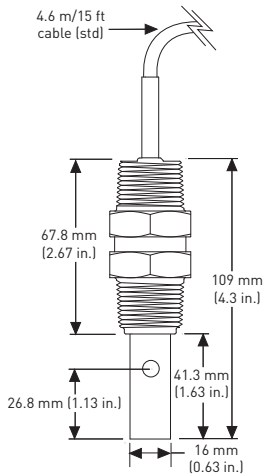


3-2840-1 (0.1 cell)



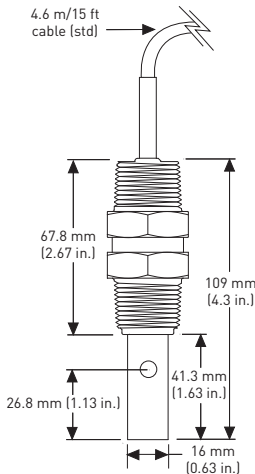
Dual threads 3/4 NPT
 or ISO 7/1-R 3/4 front
 and back

3-2841-1 (1.0 cell)*



Dual threads 3/4 NPT
 or ISO 7/1-R 3/4 front
 and back

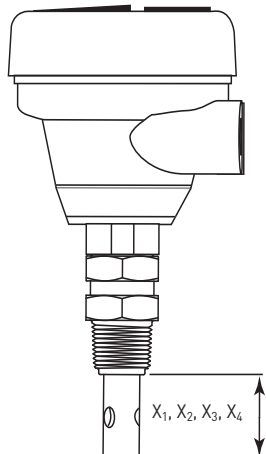
3-2842-1 (10.0 cell)*



* 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) = 73 mm [2.88 in.]
- X2 (3-2840-1) = 35 mm [1.38 in.]
- X3 (3-2841-1) = 41.3 mm [1.63 in.]
- X4 (3-2842-1) = 41.3 mm [1.63 in.]

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
 8850 8900
- 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 field mount transmitter.
 - Order a field mount transmitter designed for integral mounting: 3-8850-1, 3-8850-2, 3-8850-3.
- 4) The sensor cable can be extended up to 30 m (100 ft) for 0.1, 1.0 and 10.0 cells only.

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 4.6 m (15 ft) cable; for use with Models 8850, 8860, 5800CR, and 5900 Conductivity Instruments
Thread Size(s) - Choose One	
-	¾ inch NPT
D	ISO 7/1-R 3/4
Special Order Options	
NIST Traceable and certified within +/- 1% of the value (contact factory)	
Cable length extensions of up to 30 m (100 ft) are available. For resistivity measurements above 10 MΩ, the maximum cable length is 7.6 m (25 ft) - consult factory	
3-2840	-1 D Example Part Number

Mfr. Part No.	Code	Mfr. Part No.	Code
3-2839-1	159 000 921	3-2841-1	159 000 790
3-2839-1D	159 000 923	3-2841-1D	159 000 792
3-2840-1	159 000 786	3-2842-1	159 000 794
3-2840-1D	159 000 788	3-2842-1D	159 000 796

Conductivity/
Resistivity

Example of NIST Traceability Certificate

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
<ul style="list-style-type: none"> • 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.

Accessories and Replacement Parts

Mfr. Part No.	Code	Description
3-2830	159 000 628	Conductivity certification tool; simulates 1 µS/cm and 2.5 µS/cm
3-2842.390	159 000 925	2842 replacement insulator, PEEK™ with FPM O-ring
3-8052	159 000 188	¾ in. integral mounting kit
5523-0322	159 000 761	Sensor cable (per ft), 3 cond. plus shield, 22 AWG (for cable extension through a junction box for the following sensors: 3-2840, 3-2841, 3-2842
3-8050-1	159 000 753	Universal mount junction box