

2839-1

2840-1

2841-1
2842-1

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 $\frac{3}{4}$ in. NPT or ISO 7/1-R $\frac{3}{4}$ enable quick and easy installation in submersible or in-line configurations. Transmitter integral mounting kit and junction boxes are available as accessories.

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 $\pm 1\%$ of value - meets USP requirements



Applications

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

Specifications

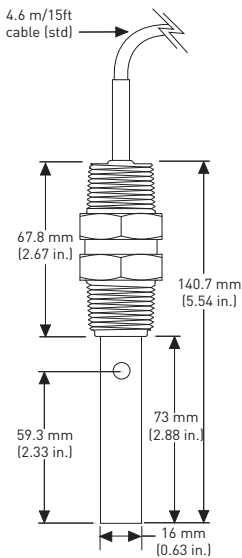
General				
Operating Range				
	2839	0.055 to 100 μ S	0.02 to 50 ppm	18.2 M Ω to 10 K Ω
	2840	1 to 1,000 μ S	0.5 to 500 ppm	1 M Ω to 1 K Ω
	2841	10 to 10,000 μ S	5 to 5,000 ppm	
	2842	100 to 200,000 μ S	50 to 100,000 ppm	
Cell Constant Accuracy		\pm 2% of cell constant value (standard). Cell constants can be traceable to NIST and certified to within \pm 1% of value (contact factory)		
Dual-Threaded Process Connection		-1 versions: 3/4 in. NPT		
		-1D versions: ISO 7/1-R 3/4		
Cable Length (use for the 2839, 40, 41 and 42)	standard	4.6 m (15 ft)		
	maximum	30 m (100 ft) all other sensors		
	0.01 cells	4.6 m (15 ft) used with 8850, 8860, and 2850		
Temperature Element		PT1000		
Temp. Response, τ				
	0.01 cell	5 sec.		
	0.10 cell	10 sec.		
	1.0 cell	20 sec.		
	10.0 cell	30 sec.		
Temperature Accuracy		\pm 0.5 $^{\circ}$ C	\pm 0.9 $^{\circ}$ F	
Wetted Materials				
Internal O-ring (2841 and 2842)		FPM		
Insulator Material		PEEK™		
Electrode Material		316 SS		
Threaded Process Connection		PEEK™		
Max. Temperature/Pressure Rating				
		131 $^{\circ}$ C @ 2.76 bar	268 $^{\circ}$ F @ 40 psi	
Storage Temperature		-20 $^{\circ}$ C to 131 $^{\circ}$ C	-4 $^{\circ}$ F to 268 $^{\circ}$ F	
Shipping Weight				
2839		0.34 kg	0.74 lb	
2840, 2841, 2842		0.30 kg	0.66 lb	
Standards and Approvals				
		RoHS compliant		
		China RoHS		
		Manufactured under ISO 9001 for Quality and ISO 14001 for Environmental Management		

See Temperature and Pressure graphs for more information.

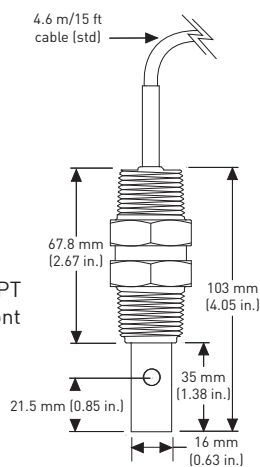
Dimensions

Dual-Threaded Electrodes

3-2839-1 (0.01 cell)

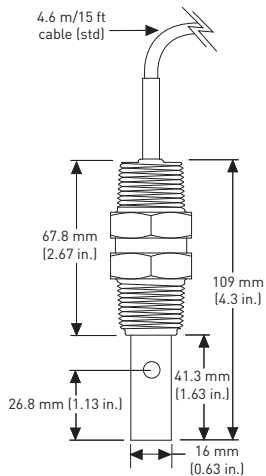


3-2840-1 (0.1 cell)



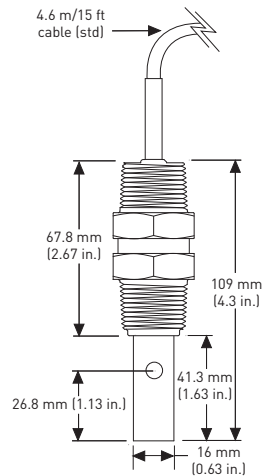
Dual threads 3/4 NPT or ISO 7/1-R 3/4 front and back

3-2841-1 (1.0 cell)*



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

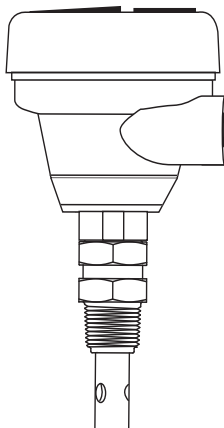
3-2842-1 (10.0 cell)*






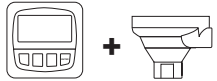

* Although these electrodes look similar in design, there is an inherent difference. From the bottom view, the 2841 electrode features a simple plastic insert. However, the 2842 electrode features a complex plastic insert with four holes through which liquid flows.

Integral Mount Sensor

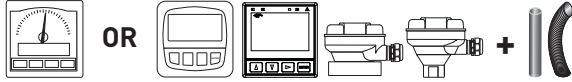

The 2839-2842 Dual Threaded Conductivity Electrodes can be directly mounted to a 3-8850-X transmitter, using the 8052 Integral Mount Kit, and a customer modified sensor cable length.



In-Line Installation

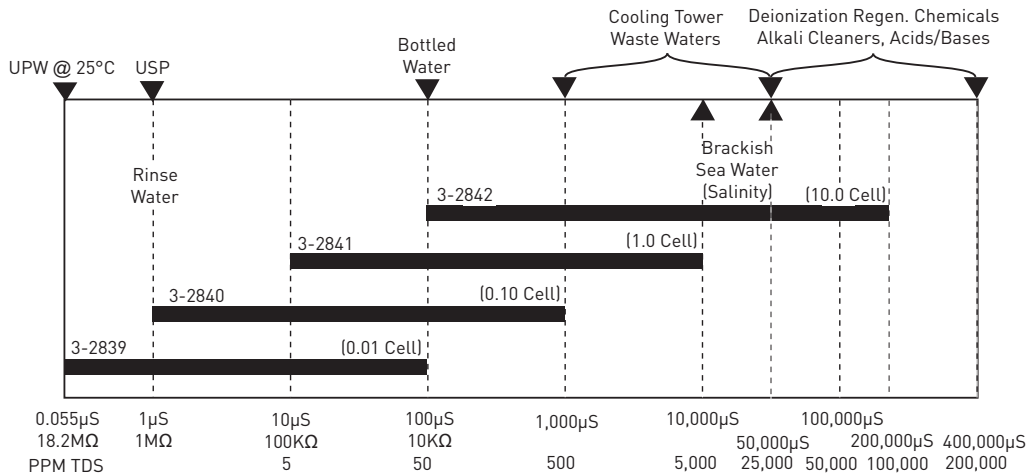
Panel Mount	Field Mount - Pipe, Tank, Wall	4 to 20 mA input	Integral Mount
Signet Instruments 5800CR 8850 8860 8900 9900 with 2850 Sensor Electronics 	Signet Instrument 8850 with 3-8050 Universal Mount Kit 	Signet 2850 Sensor Electronics with a customer supplied Programmable Logic Controller 	Signet Instrument 8850 with 3-8052 Integral Mount Kit 
Signet 2839-2842 Conductivity Electrodes 			
Customer Supplied Fittings, 3/4 in. NPT or ISO threaded		All sold separately	

Submersible Installation

Field Mount - Pipe, Tank, Wall	
Signet Instruments 5800CR 8850 8860 8900 9900 with 2850 Sensor Electronics and customer supplied pipe extension or conduit with 3/4 in. FNPT threads* 	Signet 2839-2842 Conductivity Electrodes 
All sold separately	

*Refer to the Signet Submersion brochure located in the K-Factors Fittings and More Kit (3-0000-709) for installation suggestions and options.

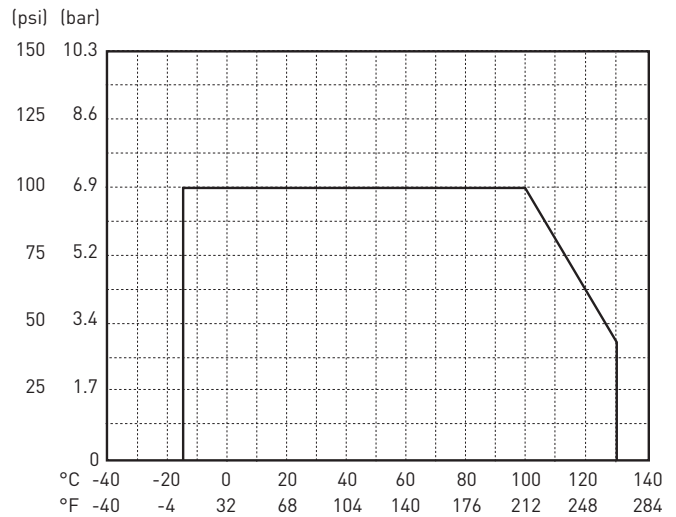
Operating Range Chart



Operating Temperature/Pressure Graphs

Note:

The pressure/temperature graphs are specifically for the Signet sensor. During system design the specifications of all components must be considered. In the case of a metal piping system, a plastic sensor will reduce the system specification. When using a PVDF sensor in a PVC piping system, the fitting will reduce the system specification.



Application Tips

- Use 2839 series electrodes with the 3-2850-63 electronics and 8900 for applications requiring multiple measuring points.
- Liquid levels must be high enough to cover vent hole 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.

Ordering Notes

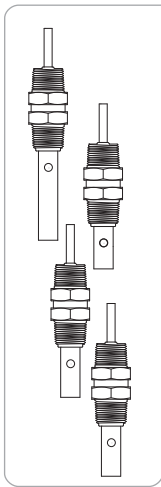
- 1) Cell constants can be traceable to NIST and certified within ±1% of value (contact factory).
- 2) The Conductivity Certification tools are compatible with the following Signet Instruments: 5800CR, 8860, 8850, 8900, 9900.
- 3) The sensor cable can be extended up to 30 m (100 ft) for 0.1, 1.0 and 10.0 cells only.

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	

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

Ordering Information



Sensors for use with 8850, 8860, 5800CR and 5900 Conductivity Instruments

Mfr. Part No.	Code	Cell Constant	Connection	Thread Size(s)	Cable Length
3-2839-1	159 000 921	0.01 cm-1	Dual threaded	¾ inch NPT	4.6 m (15 ft)
3-2839-1D	159 000 923	0.01 cm-1	Dual threaded	ISO 7/1-R 3/4	4.6 m (15 ft)
3-2840-1	159 000 786	0.1 cm-1	Dual threaded	¾ inch NPT	4.6 m (15 ft)
3-2840-1D	159 000 788	0.1 cm-1	Dual threaded	ISO 7/1-R 3/4	4.6 m (15 ft)
3-2841-1	159 000 790	1.0 cm-1	Dual threaded	¾ inch NPT	4.6 m (15 ft)
3-2841-1D	159 000 792	1.0 cm-1	Dual threaded	ISO 7/1-R 3/4	4.6 m (15 ft)
3-2842-1	159 000 794	10 cm-1	Dual threaded	¾ inch NPT	4.6 m (15 ft)
3-2842-1D	159 000 796	10 cm-1	Dual threaded	ISO 7/1-R 3/4	4.6 m (15 ft)

Special Order Options - Please consult the factory

NIST Traceable and certified within $\pm 1\%$ of the value (contact factory)

Cable length extensions of up to 30 m (100 ft) are available. For resistivity measurements above 10 M Ω , the maximum cable length is 7.6 m (25 ft) - consult factory

Accessories and Replacement Parts

Mfr. Part No.	Code	Description
3-2830	159 000 628	Conductivity certification tool; simulates 1 $\mu\text{S}/\text{cm}$ and 2.5 $\mu\text{S}/\text{cm}$
3-2842.390	159 000 925	2842 replacement insulator, PEEK™ with FPM O-ring
3-2850-61	159 001 400	Universal junction box, conductivity electronics, digital (S ³ L) output
3-2850-52	159 001 401	Universal junction box, conductivity electronics, 4 to 20 output
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

3-2839.099 Rev B (10/11)

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