Type 2839-1V(D) to 2842-1V(D) PVDF Conductivity Electrodes

2839-1V	2840-1V	2841-1V 2842-1V

Product description

The type 2839-1V(D) to 2842-1V(D) 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 PVDF insulator and process connections are injection over-molded to minimize variance between electrodes. Double threaded connections in either ¾ 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.
A Certificate of Calibration is included with all 2839-1V(D) to 2842-1V(D) conductivity/Resistivity Electrodes. The electrodes are calibrated to meet
± 2% accuracy.
The certificate includes calculated cell constant and temperature offset which when entered into the „custom cell“ menu of any GF meter would provide a 2% accuracy of the sensors reading. Electrodes can be shipped back to the GF factory for recertification.

Features

- ± 2% accuracy - Custom calibration certificate provided
- Dual-threaded for in-line, submersible, or integral mount for 2850 sensor electronics
- 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 PVDF process connections and insulators
- 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

Technical Details

General

Operating Range				
	2839	0.055 to 100 µS	0.02 to 50 ppm	18.2 MΩ to 10 KΩ
	2840	1 to 1'000 µS	0.5 to 500 ppm	1 MΩ to 1 KΩ
	2841	10 to 10'000 µS	5 to 5'000 ppm	
	2842	100 to 200'000 µS	50 to 100'000 ppm	
Cell Constant Accuracy		±2% when the custom cell constant is entered into the transmitter/meter or when wet calibrated with a traceable standard.		
Dual-Threaded Process Connection		-1V versions: ¾ in. NPT		
		-1VD versions: ISO 7/1-R 3/4		
Cable Length (use for the 2839, 2040, 2041 and 2042)	standard	4.6 m (15 ft)		
	maximum	30 m (100 ft) all sensors when used with the 9900, 9950 and direct conductivity/resistivity modules		
	Maximum 2850 input cable length 4.6 m (15 ft) for all cells			
Temperature Element		PT1000		
Temp. Response, t				
	0.01 cell	5 sec.		
	0.10 cell	10 sec.		
	1.0 cell	20 sec.		
	10.0 cell	30 sec.		
Temperature Accuracy		±0.5 °C	±0.9 °F	

Wetted Materials

Electrode Material	316 SS
Threaded Process Connection	PVDF
Internal O-ring (2841 and 2842)	FKM
Insulator Material	PVDF

Max. Temperature/Pressure Rating

	131 °C @ 2.76 bar	268 °F @ 40 psi
Storage Temperature	-20 °C to 131 °C	-4 °F to 268 °F

Shipping Weight

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

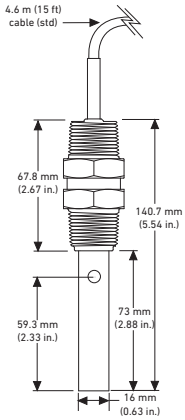
Standards and Approvals

RoHS compliant, China RoHS
Manufactured under ISO 9001, ISO 14001 and ISO 45001

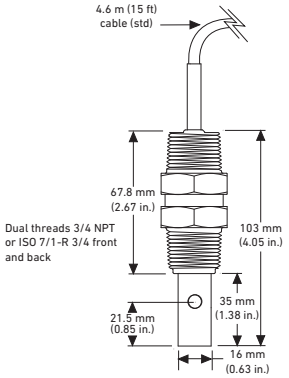
Dimensions

Dual-Threaded Electrodes

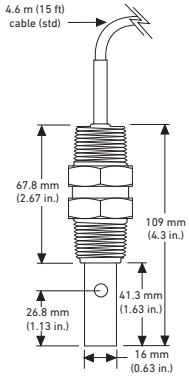
3-2839-1V(D) (0.01 cell)



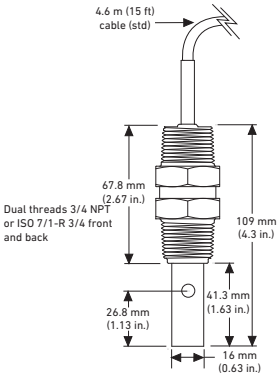
3-2840-1V(D) (0.1 cell)



3-2841-1V(D) (1.0 cell)*



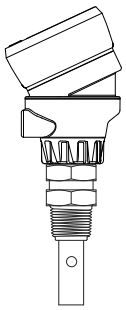
3-2842-1V(D) (10.0 cell)*



* 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 form an Integral Mount System with the 3-9900-1 GF Transmitter when using the 3-9900.396 Direct Conductivity Module, angle adapter and the 8052 Integral Mount Kit. Complete Integral Mount System with 9900 transmitter are available through our Specials program.

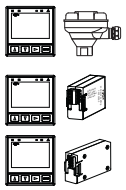


System Overview

In-Line Installation

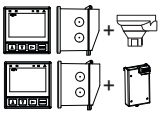
Panel Mount

GF Instruments
- 9900 with 2850 Sensor Electronics
- 9900 or with 3-9900.394 Direct Conductivity/Resistivity Module
- 9950 with 9950.394 Direct Conductivity/Resistivity Module or with 3-9950.394-2 Dual Channel Conductivity Module



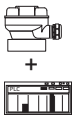
Pipe, Tank, Wall Mount

GF Instruments
- 9900 with 2850 Sensor Electronics
- 9900 and Rear Enclosure or with 3-9900.394 Direct Conductivity/Resistivity Module and Rear Enclosure



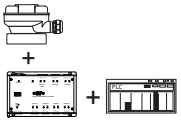
4 to 20 mA Output*

Type 2850 Sensor Electronics with
- Customer Supplied Programmable Logic Controller or
- Programmable Automation Controller



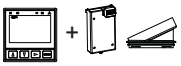
Automation System

Type 2850 Sensor Electronics with
- 0486 Profibus Concentrator and
- Customer Supplied Programmable Logic Controller or
- Programmable Automation Controller



Field (Integral) Mount*

GF Instrument
- 9900 with 3-9900.394 Direct Conductivity/Resistivity Module, 3-9900.396 angle adapter and 3-8052 Integral Mount Kit



Type 2839-2842
Conductivity Electrodes

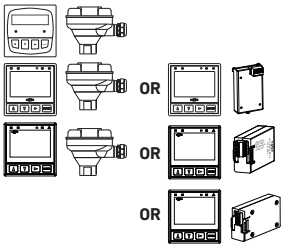
Customer Supplied Fittings, 3/4 in. NPT or ISO threaded

All Sold Separately

Submersible Installation

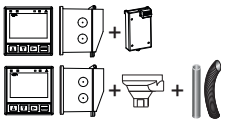
Panel Mount

GF Instrumentswith 2850 Sensor Electronics
- 9900 or with 3-9900.394 Direct Conductivity/Resistivity Module
- 9950 with 9950.394-1 Direct Conductivity/Resistivity Module or with 3-9950.394-2 Dual Channel Conductivity Module



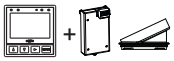
Pipe, Tank, Wall Mount

GF Instruments with 2850 Sensor Electronics
- 9900 and Rear Enclosure or with 3-9900.394 Direct Conductivity/Resistivity Module, Rear Enclosure and customer supplied pipe extension or conduit with 3/4 in. FNPT threads*



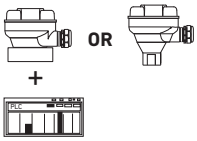
Field (Integral) Mount

GF Instrument
- 9900 with 3-9900.394 Direct Conductivity/Resistivity Module, 3-9900.396 angle adapter and 3-8052 Integral Mount Kit



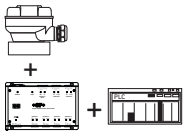
4 to 20 mA Output*

Type 2850 Sensor Electronics with
- Customer Supplied Programmable Logic Controller or
- Programmable Automation Controller



Automation System

Type 2850 Sensor Electronics with
- 0486 Profibus Concentrator and Customer Supplied Programmable Logic Controller or
- Programmable Automation Controller



Type 2839-2842
Conductivity Electrodes

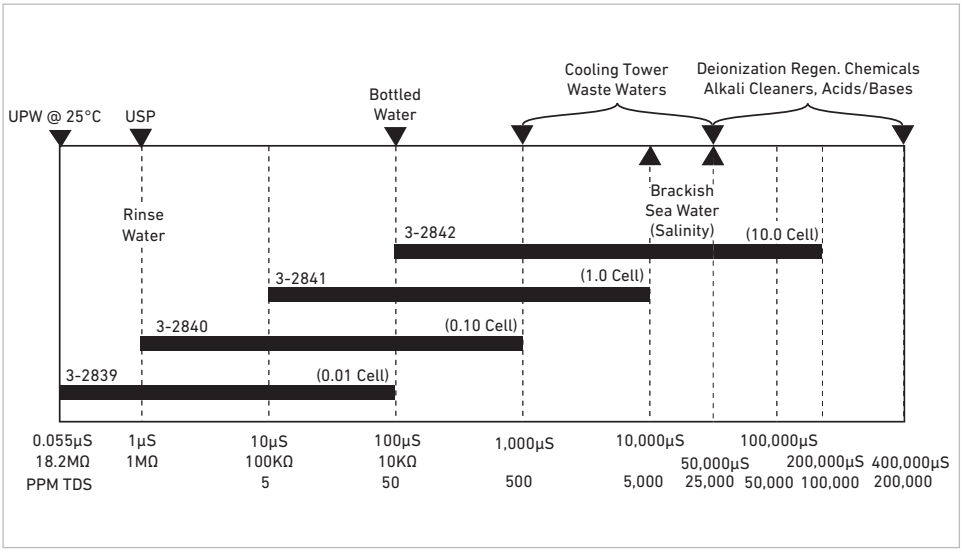
All Sold Separately

*Refer to the GF Submersion Kit brochure (3-0000.707) located on our website for installation suggestions and options.

Application Tips

- To optimize 9950-10 /-11 I/O module selection, you can utilize 2850-63 for two conductivity sensors at a time.
- 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.

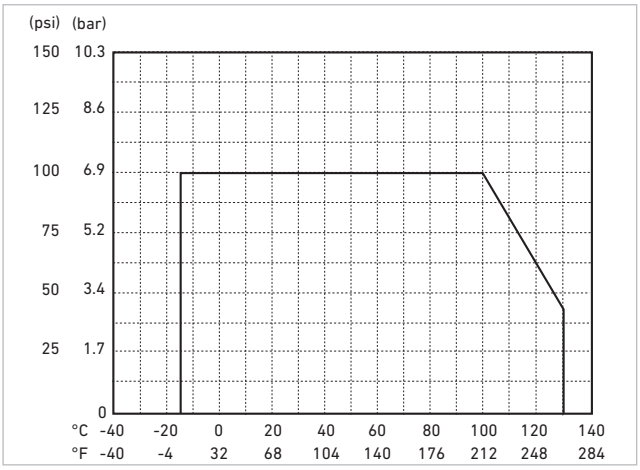
Operating Range Chart



Pressure-temperature diagram

Note

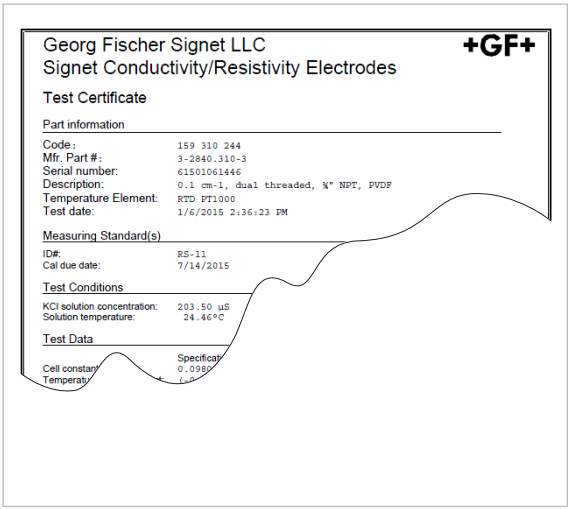
The pressure-temperature diagrams are specifically for the GF sensor. During system design the specifications of all components must be considered. In the case of a metal piping system, a plastic sensor will reduce the system specification.



Ordering Information

Ordering Notes

1. The Conductivity Certification tools are compatible with the following GF Instruments: 9900 and 9950.
2. The sensor cable can be extended up to 30 m (100 ft). See restrictions under General specifications.


Georg Fischer Signet LLC
+GF+
Signet Conductivity/Resistivity Electrodes
Test Certificate
Part information
Code: 159 310 244
Mfr. Part #: 3-2840.310-3
Serial number: 61501061446
Description: 0.1 cm-1, dual threaded, ¾" NPT, PVDF
Temperature Element: RTD PT1000
Test date: 1/6/2015 2:36:23 PM
Measuring Standard(s)
ID#: RS-11
Cal due date: 7/14/2015
Test Conditions
KCl solution concentration: 203.50 µS
Solution temperature: 24.46°C
Test Data
Specificat
Cell constan 0.098
Temperat

Mfr. Part No.	Code	Cell Constant	Connection	Thread Size(s)	Cable Length
3-2839-1V	159 001 810	0.01 cm-1	Dual threaded	¾ inch NPT	4.6 m (15 ft)
3-2839-1VD	159 001 811	0.01 cm-1	Dual threaded	ISO 7/1-R ¾	4.6 m (15 ft)
3-2840-1V	159 001 812	0.1 cm-1	Dual threaded	¾ inch NPT	4.6 m (15 ft)
3-2840-1VD	159 001 813	0.1 cm-1	Dual threaded	ISO 7/1-R ¾	4.6 m (15 ft)
3-2841-1V	159 001 814	1.0 cm-1	Dual threaded	¾ inch NPT	4.6 m (15 ft)
3-2841-1VD	159 001 815	1.0 cm-1	Dual threaded	ISO 7/1-R ¾	4.6 m (15 ft)
3-2842-1V	159 001 816	10 cm-1	Dual threaded	¾ inch NPT	4.6 m (15 ft)
3-2842-1VD	159 001 817	10 cm-1	Dual threaded	ISO 7/1-R ¾	4.6 m (15 ft)

Special Order Options - Please consult the factory

- Cable length extensions of up to 30 m (100 ft) are available.
- For resistivity measurements above 10 MΩ when used with the 8850-3 or the 8860 cable lengths of the sensor should not exceed 4.6 m (15 ft)

Accessories

Mfr. Part	Code	Description
3-2850.101-1	159 001 392	Plug-in NIST traceable recertification tool, 1.0 µS simulated, for use with 2850 and 9900
3-2850.101-2	159 001 393	Plug-in NIST traceable recertification tool, 2.5 µS simulated, for use with 2850 and 9900
3-2850.101-3	159 001 394	Plug-in NIST traceable recertification tool, 10.0 µS simulated, for use with 2850 and 9900
3-2850.101-4	159 001 395	Plug-in NIST traceable recertification tool, 18.2 MΩ simulated, for use with 2850 and 9900
3-2850.101-5	159 001 396	Plug-in NIST traceable recertification tool, 10.0 MΩ simulated, for use with 2850 and 9900
3-2820.390	198 840 223	¾ in. NPT Fitting, 316 SS replacement for 2823-1, and use for submersible mounting of 2822-1
3-2820.391	198 840 221	¾ in. NPT Fitting, Polypro replacement for 2819-1, 2820-1 or 2821-1
3-2820.392	198 840 222	½ in. NPT Fitting, 316 SS for higher temperature/pressure use with 2819-1, 2820-1 or 2821
3-2850-61	159 001 400	Universal junction box, conductivity electronics, digital (S^3L) output
3-2850-62	159 001 401	Universal junction box, conductivity electronics, 4 to 20 output
3-2850-63	159 001 402	Dual digital (S3L) outputs (for 9950-10/-11)
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: 3-2820, 3-2821, 3-2822, 3-2823
3-8050-1	159 000 753	Universal mount junction box

* Note: GF recommended sensors that require extended cable lengths be ordered from the factory.

3-2839-1V.099 Rev G
06/2024-A

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