

Signet 2734-2736 pH/ORP Electrodes



Compatible with Signet 8900/9900 Instruments



Flat



Protected Bulb

The Signet 2734-2736 pH and ORP Electrodes features a patented reference electrode design and uses the unique foul-proof patented DryLoc® connector. The large area PTFE reference junction, salt bridge and reference electrode are constructed to increase the total reference effectiveness, resist chemical attack, and ensure long service life.

The DryLoc connector with corrosion resistant gold plated contacts readily connects the sensor to the mating 2750 Sensor Electronics. The robust Ryton® threaded sensor body and choice of flat, bulb pH, or flat ORP sensing elements provide a broad range of chemical compatibility for a wide variety of applications.

There is an optional pH sensing version available for applications with HF. The HF version is for applications where traces of hydrofluoric acid (2% or less) will attack standard pH glass in levels of pH 6 and below.

The quick temperature response is available in a PT1000 temperature sensor and allows compatibility with the Signet 8900 and 9900 instruments.

The 2734-2736 electrodes are ideal for a wide range of harsh applications. The sensors incorporate 3/4 inch NPT or ISO 7/1-R 3/4 threads for installing into standard pipe-tees. They can also be mounted directly into Signet standard fittings, DN15 to DN100 (1/2 to 4 inch).

Features

- Enhanced reference and bridge gels to resist chemical poisoning and prolong the life of the electrodes
- PTFE reference junction resists fouling and chemical attack
- Patented reference design for exceptional performance*
- Mounts in Signet standard fittings from DN15 to DN100 (1/2 to 4 in.) or standard pipe fitting, 3/4" NPT or ISO 7/1 R 3/4
- Special design allows for installation at any angle, even inverted or horizontal
- Ryton® (PPS) body and PTFE junction for broad range of chemical compatibility
- Patented DryLoc connector with gold plated contacts
- Quick temperature response
- Bulb and flat HF resistant glass available for trace HF, in less than 2% concentration applications



Applications

- Water & Wastewater Treatment
- Neutralization Systems
- Effluent Monitoring
- Sanitization Systems
- Pool & Spa Control
- Aquatic Animal Life Support Systems
- Process Control
- Cooling Towers

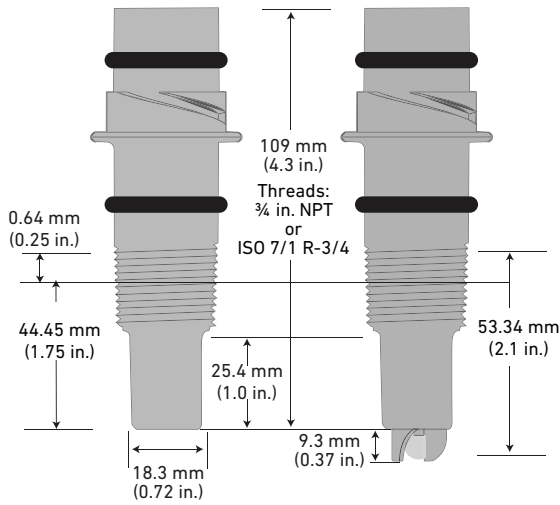
*U.S. Patent Nos.: 6,666,701, 7,799,193 B2, 7,867,371 B2 and 8,211,282 B2

Specifications

General			
Performance	Efficiency	>95% @ 25 °C (77 ° F)	
Operating Range	pH	0 to 14 pH	
	ORP	±2000 mV	
	3-2734-HF, 3-2736-HF	Hydrofluoric acid resistant glass, pH 6 or below; trace HF ≤2%	
Compatibility			
	2750 Sensor Electronics (for 8900, 9900, Profibus Concentrator, 4 to 20 mA)		
Temperature Sensor			
	PT1000	Compatible with Signet 2750 pH/ORP Sensor Electronics for connection to a PLC or to the Signet 8900 or 9900 instruments and Profibus Concentrator	
Process Connection			
	¾ in. NPT	ISO 7/1-R ¾	Mounts into Signet fittings
Wetted Materials			
	pH	Ryton® (PPS), glass, PTFE, FPM	
	ORP	Ryton® (PPS), glass, PTFE, FPM, Platinum	
Max. Temperature/Pressure Rating			
Operating Temperature Range		10 °C to 100 °C	50 °F to 212 °F
Operating Pressure Range		0 to 6.9 bar (0 to 100 psi) @ 10 °C to 65 °C (50 °F to 149 °F)	
		Linearity Derated 6.9 to 4.0 bar (100 to 58 psi) @ 65 °C to 100 °C (149 °F to 212 °F)	
Recommended Storage Temperature			
		0 °C to 50 °C	32 °F to 122 °F
The electrode glass will shatter if shipped or stored at temperature below 0 °C (32 °F)			
The performance life of the electrode will shorten if stored at temperatures above 50 °C (122 °F)			
Mounting			
In-line Mounting	Use the sensor threads		
	Use a Signet standard fitting ½ to 4 in.		
	Sensor can be mounted at any angle		
Submersible Mounting	Use threads on model 2750		
	Requires ¾ in. NPT or ISO 7/1-R ¾ male threaded liquid tight extension conduit.		
Shipping Weight			
	0.25 kg	0.55 lb	
Standards and Approvals			
CE, FCC, RoHS compliant, China RoHS			
Manufactured under ISO 9001 for Quality, ISO 14001 for Environmental Management and OHSAS 18001 for Occupational Health and Safety			

See Temperature and Pressure graphs for more information

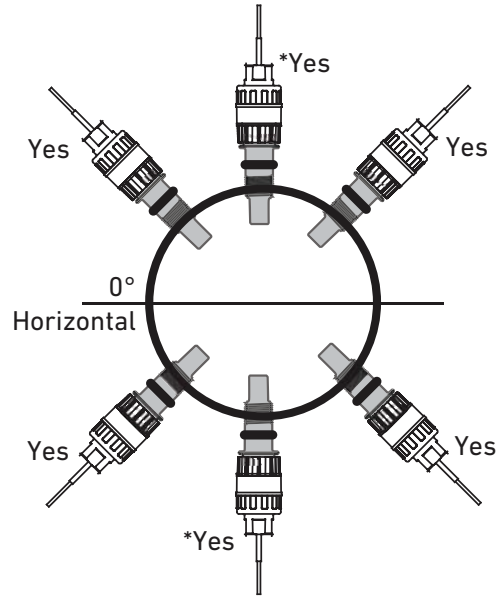
Dimensions



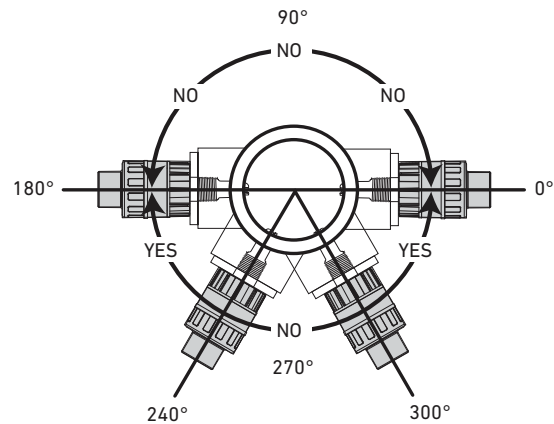
Mounting Angle using GF Signet Fittings

Models 2734-2736 may be mounted at any angle without affecting the performance

*Avoid locations with air pockets and sediment



When mounting in standard threaded fittings the electrode must be mounted horizontally to 60 degrees below horizontal position only.



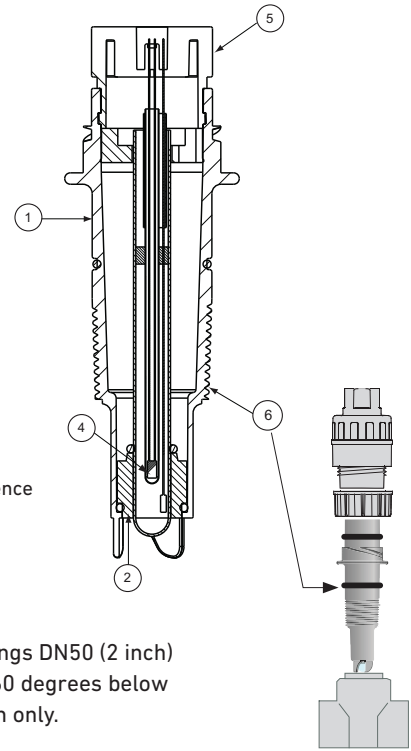
System Overview

Panel Mount	Pipe, Tank, Wall Mount	4 to 20 mA Output	Automation System
Signet Instruments 8750 with 2760 Pre-amplifier 8900 9900 with 2750 Electronics	Signet Instruments 9900 with 2750 and Rear Enclosure	2750 Sensor Electronics and Customer Supplied Chart Recorder or Programmable Logic Controller or Programmable Automation Controller	2750 Sensor Electronics with 0486 Profibus Concentrator and Customer Supplied Programmable Logic Controller or Programmable Automation Controller
Signet 2734-2736 DryLoc [®] pH/ORP Electrodes			
All sold separately			
In-Line Installation - Signet and threaded fittings only		Submersible Installation - Customer supplied pipe extension or conduit with 3/4 in. NPT or ISO 7/1-R 3/4 threads*	

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

Electrode Key Features and Benefits:

1. Ryton® body for chemical compatibility with most harsh chemicals.
2. Porous PTFE junction resists fouling, chemicals, and build-up.
3. Enhanced Reference Technology to increase electrode life.
4. Internal temperature sensor located in the glass stem for a quick temperature response.
5. DryLoc® connector with corrosion resistant gold pins for quick and easy sensor removal. Resists moisture and dirt intrusion.
6. Threads for NPT or ISO process connection into reducing tees. Use off-the-shelf GF reducing tees DN20 to DN100 (¾ to 4 in.).
7. Enhanced reference and bridge gel resist poisoning and prolong the life of the electrodes in demanding applications.
8. Mounts directly into Signet fittings (½ in. to 4 in.) for easy sensor retrofitting.
9. Mount submersed into a tank via the 2750 Sensor Electronics.



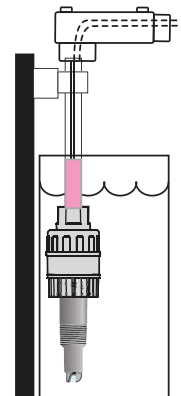
Dual-patented reference design for long life.

For pipes and fittings DN50 (2 inch) or larger, mount 60 degrees below horizontal position only.

Sensor in threaded reducing tee



⑧ Sensor in Signet fitting

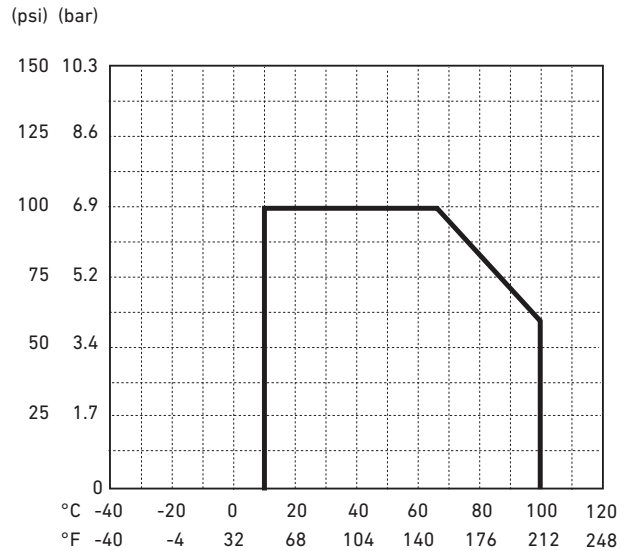


⑨ Sensor in submersible installation

Temperature/Pressure Graph

Note:

The pressure/temperature graph is 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.



Application Tips

- Use the flat glass electrodes when a self-cleaning feature is desired; especially useful in applications with abrasive chemicals.
- Use bulb protected electrodes for general purpose applications.
- ORP electrodes are generally used for chemical reaction monitoring, not control.
- Ensure that sensor materials are chemically compatible with the process liquid.
- Keep electrode tip wet, avoid air pockets and sediment.

Model 2734-2736 Ordering Notes

- 1) pH and ORP Sensor Electrodes require connection to model 2750 Sensor Electronics.
- 2) The 2750 "EasyCal" feature recognizes common pH and ORP buffer values of 4, 7 and 10 pH and +87 and +264 mV for ORP.

Buffer Solutions

- 3822-7004
- 3822-7007
- 3822-7010

Quinhydrone

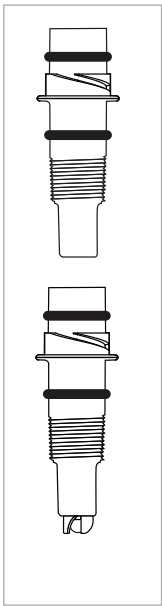
3822-7115

The Signet pH buffers are ideal for calibration. The liquid solutions are conveniently packaged in one pint (473 ml) bottles. pH buffer kits in powder pillows are available for mixing fresh solutions with water at the time of use.

All pH buffers are color coded for easy identification; 4.01 pH is red, 7.00 pH is yellow, and 10.00 pH is blue. All pH buffers are traceable to NIST standards. The 4.01 and 7.00 buffer solutions can be used to calibrate ORP sensors when saturated with quinhydrone.



Ordering Information



Mfr. Part No.	Code	Tip Design	Process Connection
pH Electrodes - Temperature element PT1000; use with 2750 Sensor Electronics*			
3-2734-00	159 001 774	Flat	3/4 in. NPT, Thread
3-2734-01	159 001 775	Flat	ISO 7/1-R 3/4 Thread
3-2734-HF-00	159 001 776	Flat, HF Resistant ¹	3/4 in. NPT, Thread
3-2734-HF-01	159 001 777	Flat, HF Resistant ¹	ISO 7/1-R 3/4 Thread
3-2736-00	159 001 778	Bulb	3/4 in. NPT, Thread
3-2736-01	159 001 779	Bulb	ISO 7/1-R 3/4 Thread
3-2736-HF-00	159 001 780	Bulb, HF resistant ¹	3/4 in. NPT, Thread
3-2736-HF-01	159 001 781	Bulb, HF resistant ¹	ISO 7/1-R 3/4 Thread
ORP Electrodes - Compatible with 2750 Sensor Electronics and 2760 Preamplifier			
3-2735-60	159 001 782	Flat, 10K	3/4 in. NPT, Thread
3-2735-61	159 001 783	Flat, 10K	ISO 7/1-R 3/4 Thread

*The 2750 Sensor Electronics has a digital (S³L) output which is used with 8900 or 9900 instruments, and Profibus Concentrator.

It also has a 4 to 20 mA output for connections to PLC's, data recorders, etc.

¹HF resistant $\leq 2\%$ HF

Note:

The 2734 and 2736 pH electrodes are **not** compatible with the Signet 2760 Preamplifier or the 8750 instrument.

Accessories and Replacement Parts

Mfr. Part No.	Code	Description
1220-0021	198 801 000	O-ring, FPM
3-2700.395	159 001 605	Calibration kit: includes 3 polypropylene cups, box used as cup stand, 1 pint (473 ml) pH 4.01, 1 pint (473 ml) pH 7.00
3822-7115	159 001 606	20 gm bottle quinhydrone for ORP calibration (must use pH 4.01 and/or pH 7.00 buffer solutions)
3-2759	159 000 762	pH/ORP System Tester (adapter cable sold separately)
3-2759.391	159 000 764	2759 DryLoc Adapter Cable (for use with 2750 and 2760)
3-0700.390	198 864 403	pH Buffer Kit (1 each 4, 7, 10 pH buffer in powder form, makes 50 ml of each)
3822-7004	159 001 581	pH 4.01 buffer solution, 1 pint (473 ml) bottle
3822-7007	159 001 582	pH 7.00 buffer solution, 1 pint (473 ml) bottle
3822-7010	159 001 583	pH 10.00 buffer solution, 1 pint (473 ml) bottle

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