

Signet 2774-2777 DryLoc® pH/ORP Electrodes



Flat Glass

Protected Bulb

Description

The Signet 2774 - 2777 pH and ORP Electrodes feature a unique foul-proof DryLoc® connector with gold-plated contacts designed specifically for use with the Signet 2750 and 2760 preamplifiers, sensor electronics, and connectors. These dependable and highly responsive electrodes feature a PTFE double reference junction with KNO_3 in the front chamber to block various poisoning ions such as Copper (Cu^{++}), Lead (Pb^{++}), Mercury (Hg^{++}), and a large reference chamber that combine to extend the service-life. Embedded

positioning of the temperature element in the pH sensing tip allows, the temperature response to be quick and accurate. The electrodes are offered with either flat or bulb style sensing elements. The flat versions allow sediment and particles to sweep past the measurement surface, minimizing risks of abrasion, breakage and coating. The bulb versions can be used for general-purpose applications. Due to the specially designed chambers which keep electrolyte in place, all versions can be installed at any angle, even inverted.

Features

- Durable DryLoc® connector with gold plated contacts
- Special design allows for installation at any angle, even inverted
- Quick temperature response
- Easy sensor replacement using DryLoc® electrode connector
- High temperature versions available
- Mounts into standard 3/4 inch threads
- Compatible with all pH/ORP and other suppliers' instruments

Applications

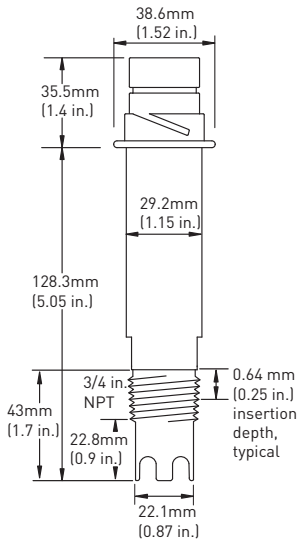
- Water Treatment & Water Quality Monitoring
- Demineralizer, Regeneration & Rinse
- Cooling Tower and Boiler Protection
- Aquatic Animal Life Support Systems
- Pool and Spa Control
- Neutralization Systems

System Overview

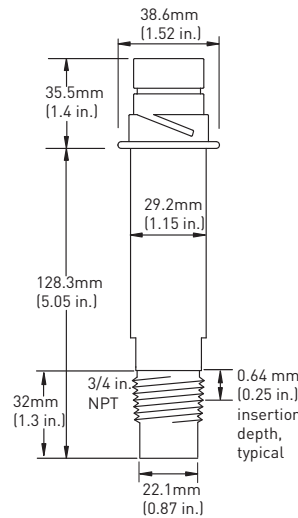
In-Line Installation				Submersible Installation	
Panel Mount Signet Instrument (sold separately) 5700 8750 8900 	4 to 20 mA Input Chart Recorder OR Programmable Logic Controller 	Pipe, Tank or Wall Mount Signet Instrument (sold separately) 8750 Signet Universal Adapter Kit (3-8050) (sold separately) 	Other Instruments Customer supplied 	Panel, Pipe, Tank, Wall Mount Signet or Other Instrument 5700 8750 8900	
Signet 2750 or Signet 2760 (sold separately) 	Signet 2750 (sold separately) 	Signet 2760 (sold separately) 	Signet 2760 (sold separately) 	Pipe extension or conduit with 3/4 in. FNPT threads (customer supplied) 	
Signet 2774-2777 DryLoc pH/ORP Electrodes 				Signet 2774-2777 DryLoc pH/ORP Electrodes 	
Fittings - Customer supplied					

See Technical Reference section for assistance in choosing the correct sensor.

Dimensions



Bulb Electrode



Flat Electrode

Specifications

General

Compatibility:

Signet Models 2750 and 2760

Operating Range:

- 2774/2776: 0 to 14 pH
- 2775/2777: +/-2000 mV (ORP)

Process Connection: 3/4 in., for use in reducing tees up to 4 in.

Reference:

Electrolyte:

KNO₃/KCl acrylamide gel

Element: Ag/AgCl

Primary Functions:

- 2774 and 2775: Flat surface resists fouling
- 2776 and 2777: Bulb surface for general use

Wetted Materials

- Body: Ryton®
- Reference junctions: PTFE
- Sensing surface: Glass membrane: (pH)
Platinum: (ORP)
- O-rings: FPM

Max. Temperature/Pressure Rating

Operating Temperature:

0 °C to 85 °C (32 °F to 185 °F)

Maximum Operating Pressure:

6.9 bar (100 psi)

Storage Temperature:

> 0°C (32 °F)

Higher temperature and pressure sensors are available.

Recommended Storage

Temperature

The best storage temperature for the 272X pH and ORP electrodes is 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/vertical mounting: Use the electrodes 3/4 inch threads to install into pipe fitting. Electrode can be mounted at any angle.
- Submersible mounting: Use threads on Model 2750 or 2760; requires 3/4 inch NPT or ISO 7/1-R 3/4 male threaded extension.

Temperature Sensor:

- pH: 3 KΩ or PT1000 RTD
- ORP: none

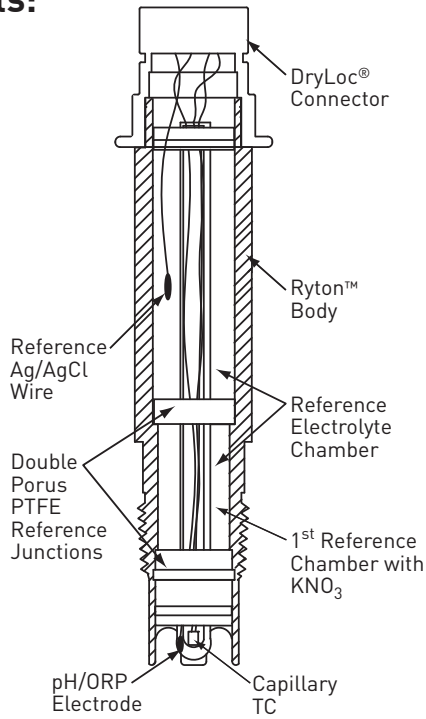
Shipping Weight 0.25 kg 0.55 lb

Standards and Approvals

- Manufactured under ISO 9001 for Quality

Electrode Key Features and Benefits:

- Ryton® body for chemical compatibility to most harsh chemicals. Also able to withstand high temperatures.
- Porous PTFE reference junctions are highly chemically resistant; resists fouling and dirt buildup.
- First reference chamber with KNO_3 protects Ag/AgCl wire for a prolonged sensor life.
- Capillary TC (temperature sensor) embedded in tip of pH electrode for quicker temperature response than most other electrodes on the market.
- DryLoc® connector with corrosion resistant gold pins for quick and easy sensor removal.



Electrode Cut-Away View

Model 2774-2777

Ordering Notes

- 1) pH and ORP sensors require connection to model 2750 or 2760.
- 2) Conduit and mounting brackets for submersible installation must always be used (customer supplied).
- 3) All of these sensors can be installed upside-down.
- 4) Special order options may have longer delivery time. Consult your local Georg Fischer sales representative for lead times.

Application Tips

- Use the flat glass electrodes for in-line pH sensor applications 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.

Ordering Information

Electrode Part Number- Choose Either a pH or ORP Electrode	
pH Electrodes	
3-2774	Flat pH surface electrode
3-2776	Bulb pH electrode with bulb protection
Temperature Element - Choose One	
-	3K Ohm RTD for pH for connection to 8750 or 5700 instruments when used with the 2760 preamplifier**
-1	PT1000 RTD for pH for connection to the 8900 when used with the 2750 sensor electronics*
Special Order Options for pH Electrodes - Options -HT and -C can only be used with the 3-2721 Preamplifier. (These options cannot be used with the 2750 or 2760)	
-HT	For high temperature and high pressure applications, up to 110 °C (230 °F) @ 150 psig; DryLoc® connector is removed and replaced with a 4.6 m (15 ft) cable.
-C	Remove DryLoc® connector and add 4.6m (15 ft) cable. Other cable lengths are available
-ISO	ISO 7/1-R 3/4 Threaded electrodes are available.
ORP Electrodes	
3-2775	Flat ORP surface electrode
3-2777	Bulb ORP electrode with bulb protection
Temperature Element - Choose One	
-	10 K ID resistor for ORP electrodes for connection to the 8750 and 5700 when used with the 2760 preamplifier or the 8900 when used with the 2750 sensor electronics
-1	No T.C. for ORP electrodes for use with other suppliers instruments when used with the 2760 connector
Special Order Options for ORP Electrodes - Options -HT and -C can only be used with the 3-2721 Preamplifier (These options cannot be used with the 2750 or 2760)	
-HT	For high temperature and high pressure applications, up to 110 °C (230 °F) @ 150 psig; DryLoc® connector is removed and replaced with a 4.6 m (15 ft) cable.
-C	Remove DryLoc® connector and add 4.6 m (15 ft) cable. Other cable lengths are available
-ISO	ISO 7/1-R 3/4 Threaded electrodes are available.
3-2775	Example Part Number

*The 2750 sensor electronics has a digital (S²L) output which is used with the 8900 Controller. It also has a 4 to 20 mA output for connections to PLC's, data recorders, etc.

**The 2760 preamplifier is used for connection directly to Signet 5700 Monitor or 8750 transmitter.

Mfr. Part No.	Code	Mfr. Part No.	Code
3-2774	159 000 955	3-2776	159 000 959
3-2774-1	159 000 956	3-2776-1	159 000 960
3-2775	159 000 957	3-2777	159 000 961
3-2775-1	159 000 958	3-2777-1	159 000 962

Accessories and Replacement Parts

Mfr. Part No.	Code	Description
3-2700.395	159 001 605	Calibration kit: includes 3 PP cups, cup stand, 1 pint pH 4.01, 1 pint 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)
3-0700.390	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 buffer solution, 1 pint (473 ml) bottle
3822-7007	159 001 582	pH 7 buffer solution, 1 pint (473 ml) bottle
3822-7010	159 001 583	pH 10 buffer solution, 1 pint (473 ml) bottle
3-2759	159 000 762	pH/ORP system tester
3-2759.391	159 000 764	Adapter cable for use with 2750/2760
3-2721	198 864 610	Remote mount pH/ORP preamplifier

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

3-2774.099 Rev A (01/10)

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