



In-line 2750

Submersible  
2750

2750-7  
2750-8

DryLoc® Electrodes sold separately

The Signet 2750 pH/ORP Sensor Electronics featuring the DryLoc® connector, provides a variety of functions to suit various requirements.

The 2750 has a preamplified signal and features two different outputs: a two-wire 4 to 20 mA loop output with EasyCal function or a digital (S<sup>3</sup>L) output which allows for longer cable lengths and is compatible with the Signet 8900 or 9900 instruments, and Profibus Concentrator.

The 2750 self-configures for pH or ORP operation via automatic recognition of the electrode type. The optional EasyCal feature allows simple push-button calibration and includes an LED indicator for visual feedback.

The DryLoc electrode connector quickly forms a robust assembly for submersible and in-line installations. NEMA 4X junction enclosures are integral parts of the 2750 in-line version and are also available as accessories for the submersible 2750.

The 2750 submersible preamplifier can also be used as an in-line preamplifier when used with the 3/4" or 1" threaded sensors including the 2724, 2734, 2774 and 2764 series electrodes. The 2750 In-line preamplifier can be used with Signet fittings up to DN100 (4 in.) and wet-tap assemblies.

## Features

- In-line integral mount and submersible installation versions
- Automatic temperature compensation
- Auto configuration for pH or ORP operation
- Optional EasyCal calibration aid with automatic buffer recognition
- Junction boxes for convenient wiring
- Patented DryLoc® connector provides a quick and secure connection to the sensor\*



## Applications

- Water and Wastewater Treatment
- Neutralization Systems
- Scrubber Control
- Effluent Monitoring
- Surface Finishing
- Flocculent Coagulation
- Heavy Metal Removal and Recovery
- Toxic Destruction
- Sanitization Systems
- Pool & Spa Control
- Aquatic Animal Life Support Systems

\*U.S. Patent No.: 6,666,701

# Specifications

## General

### Compatible Electrodes

Signet DryLoc pH and ORP Electrodes, Models 2724-2726, 2734-2736, 2756-2757 Wet-Tap, 2764-2767, 2774-2777

Operating Range	pH	0 to 14 pH
	ORP	±2,000 mV
Response Time	pH	< 6 sec. for 95% of change
	ORP	Application dependent
Materials	In-line	Valox® (PBT)
	Submersible	CPVC

## Electrical

Cable	4.6 m	15 ft	3-conductor shielded (3-2750-3, -4 submersible and -7, -8 in-line sensor electronics only)	
	22 AWG		For 9900, Profibus Concentrator, and 4 to 20 mA max. cable length is 300 m (1000 ft.) (For 8900 please refer to the Cable Calculation Table on for max. cable length)	
Power	12 to 24 VDC		±10%, regulated for 4 to 20 mA output	
	5 to 6.5 VDC		±5% regulated recommended, 3 mA max., for digital (S³L) output	
Current Output	pH		Fixed 4 to 20 mA, isolated, 0 to 14 pH (custom scaling available with 0252 tool)	
	ORP		Fixed 4 to 20 mA, isolated, -1000 to 2000 mV (custom scaling available from ±2000 mV with 0252 tool)	
Max Loop Resistance	100 Ω max. @ 12 V		325 Ω max. @ 18 V	600 Ω max. @ 24 V
Accuracy	±32 µA			
Resolution	±5 µA			
Update Rate	0.5 seconds			
Error Indication	3.6 mA			
Digital (S³L) Output	Serial ASCII, TTL level 9600 bps			
Accuracy	pH	±0.03 pH @ 25 °C		±0.03 pH @ 77 °F
	ORP	±2 mV @ 25 ° C		±2 mV @ 77 °F
Resolution	pH	≤ 0.01 pH		
	ORP	1 mV		
	Temperature	≤ 0.2 °C (0.36 °F)		
Update Rate	0.5 seconds			
Available Data	Raw mV, pH or ORP, temperature (pH)			
Error Indication	Open input diagnostic			
Input Impedance, Z	>10¹¹Ω			

## Environmental

Enclosure	3-2750-1, -2, -7, -8	NEMA 4X/IP65 with electrode connected		
	3-2750-3 & -4	NEMA 6P/IP68 with electrode and watertight conduit and/or extension pipe connected		

## Max. Temperature/Pressure Rating

### Operating Temperature

Submersible	0 °C to 85 °C	32 °F to 185 °F
	In-line	0 °C to 85 °C
Storage Temperature	-20 °C to 85 °C	-4 °F to 185 °F
Relative Humidity	0 to 95%, non-condensing (without electrode connected)	

## Shipping Weight

	3-2750-1, -2	0.75 kg	1.65 lb
	2750-3, -4, -7, -8	0.64 kg	1.41 lb

## Standards and Approvals

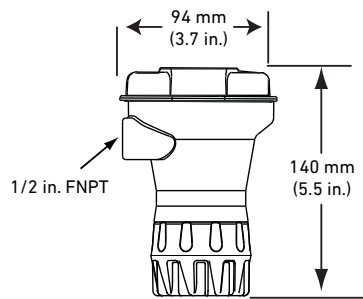
CE, FCC

RoHS compliant, China RoHS

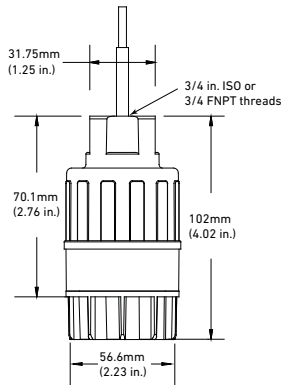
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# Dimensions

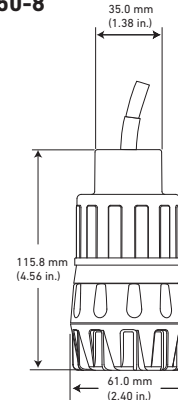
3-2750-1,-2



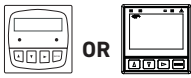
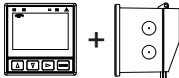

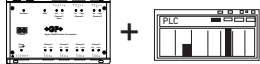



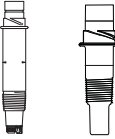
3-2750-3, -4



3-2750-7  
3-2750-8

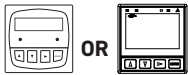


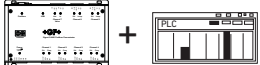
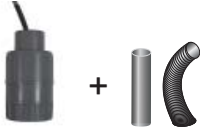
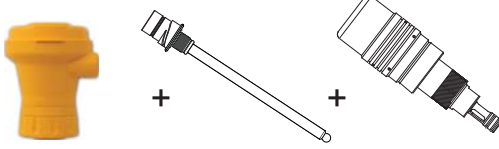
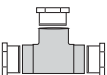


## In-Line Installation

Panel Mount	Pipe, Tank, Wall	4 to 20 mA Input	Automation System
Signet Instruments 8900 9900	Signet Instrument 9900 and Rear Enclosure	3-2750 Sensor Electronics and Customer Supplied Chart Recorder, Programmable Logic Controller, or Programmable Automation Controller	3-0486 Profibus Concentrator and Customer Supplied Programmable Logic Controller or Programmable Automation Controller
			
Signet 2750 Sensor Electronics	Signet 2750 Sensor Electronics with Signet 3-8050-2 Universal Junction Box (EasyCal)		Signet 2750 Sensor Electronics
			
Signet Electrodes 2724-2726 2734-2736 2764-2767 2774-2777			
2724-2726 and 2734-2736 DryLoc® Electrodes: Use GF fittings* or customer supplied 3/4 in. NPT fittings 2764-2767 and 2774-2777 DryLoc® Electrodes: Use customer supplied 3/4 in. or 1 in. NPT fittings			All sold separately

## Submersible Installation




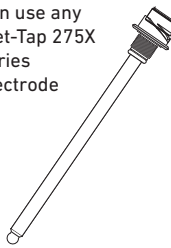
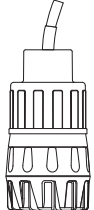

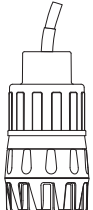

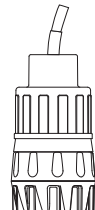

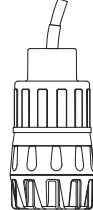
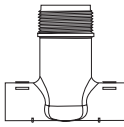
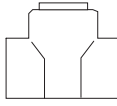
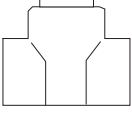
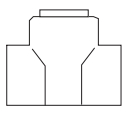

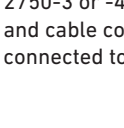


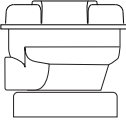
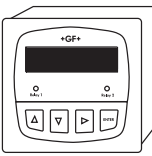

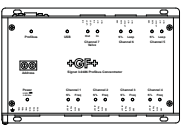
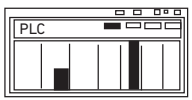

## Wet-Tap Installation

Panel Mount	Pipe, Tank, Wall	4 to 20 mA Input	Automation System
Signet Instruments 8900 9900	Signet Instrument 9900 and Rear Enclosure	2750 Sensor Electronics and Customer Supplied Chart Recorder, Programmable Logic Controller , or Programmable Automation Controller	0486 Profibus Concentrator and Customer Supplied Programmable Logic Controller or Programmable Automation Controller
			
Signet 2750 Sensor Electronics with customer supplied pipe extension or conduit, 3/4 in. NPT or ISO 7/1-R 3/4 threads**	Signet 2750 Sensor Electronics with Signet Wet-Tap Electrode 2756, 2757 and Signet 3719 Wet-Tap		
			
Signet Electrodes 2724-2726 2734-2736 2764-2767 2774-2777	GF Tees and Fittings see model 3719 for more info		
			All sold separately

\* See fittings section for more information.

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

# 2750 Product Selection Guide

<b>1. Choose the Electrode</b>	2724-2726, 2734-2736  Can use any 3-272X or 273X series Electrode 		2764-2767 Differential  3-2764-1 3-2764-2 3-2766-1 3-2766-2 		2774-2777 ORP electrodes must have 10K ID resistor use: 3-2775, 3-2777  pH Electrodes can be either the 1K or 3K use: 3-2774, 3-2774-1, 3-2776, 3-2776-1 		2756 and 2757 Wet-Tap Can use any Wet-Tap 275X series electrode 										
<b>2. Determine the mounting style:</b>	In-line  And	 2750-1, -2, -7 or -8		 2750-3 or -4		 2750-1, -2, -7 or -8		 2750-3 or -4		 2750-1, -2, -7 or -8		 2750-3 or -4		 2750-1, -2, -7 or -8			
		 Signet fitting		 3/4" reducing tee		 1" threaded tee		 3/4" reducing tee		 3719 Wet-Tap Assembly							
	-In-line fitting  Or  Submersible	 2750-3 or -4 and cable conduit (customer supplied) connected to 3/4" sensor electronics.												 +		 3719 Wet-Tap Assembly  (Submersible not applicable with Wet-Tap assembly)	
<b>3. Junction Boxes</b>	3-8050-1: Use when extending the submersible cable over long distance. 3-8050-2: Use with the submersible 2750-3 or -4 and the in-line 2750-1 for best calibration results with the EasyCal function when using the blind 4 to 20 mA output.																
<b>4. Choose the output instrument</b>	Digital (S <sup>2</sup> L)  Or  4 to 20 mA																
   8900 or 9900 Instruments, Profibus Concentrator														OR		  PLCs or Chart Recorders	

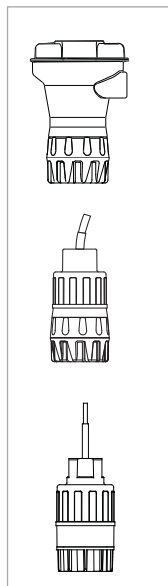
### **Model 2750 Ordering Information**

- 1) Model 2750 requires 12 to 24 VDC to function as a blind 4 to 20 mA output transmitter.
- 2) Order a 3-2750-2 or any other 2750 with a junction box 3-8050-2 or 3-8052-1 if the EasyCal feature is desired.
- 3) Conduit and mounting brackets for submersion installation must always be used (customer supplied).
- 4) The 3-2759 System Tester must be ordered with the adapter cable 3-2759.391 for exclusive use with the 2750.
- 5) All sensor electronics, preamplifiers and connectors require a DryLoc electrode for full system installation.

### **Application Tips**

- The EasyCal feature automatically recognizes standard 4.0, 7.0, and 10.0 pH buffer or ORP quinhydrone solutions of 87 and 264 mV and simplifies calibration. 3-2750-1, -3, -4, and -7 require either a 3-8050-2 or 3-8052-1 junction box to use the EasyCal feature.
- Frequency of calibration of electrodes is dependent upon the application.

## Ordering Information



Mfr. Part No.	Code	Description
In-line Sensor Electronics (Yellow body)		
3-2750-1	<b>159 000 744</b>	Recommended for 8900 or 9900 instruments
3-2750-2	<b>159 000 745</b>	with EasyCal, recommended for 4 to 20 mA use
3-2750-7	<b>159 001 671</b>	with 4.6 m (15 ft) cable, 3/4 in. NPT threads
3-2750-8	<b>Special Order</b>	with 4.6 m (15 ft) cable, ISO 7/1R 3/4 threads
Submersible Sensor Electronics (Gray body)		
3-2750-3	<b>159 000 746</b>	with 4.6 m (15 ft) cable and 3/4 in. NPT threads
3-2750-4	<b>159 000 842</b>	with 4.6 m (15 ft) cable and ISO 7/1R 3/4 threads
Sensor Electronics with preamplified signal and Digital (S <sup>3</sup> L) output (for use with the Multi-Parameter Instruments) or 4 to 20 mA output - power supplied to unit dictates output type. 3-2750-1, -3, -4, and -7 require either a 3-8050-2 or 3-8052-1 junction box for EasyCal functionality.		

## Accessories and Replacement Parts

Mfr. Part No.	Code	Description
<b>Calibration</b>		
3-2700.395	<b>159 001 605</b>	Calibration kit: includes 3 polypropylene cups, box used as cup stand, 1 pint pH 4.01, 1 pint pH 7.00
3822-7115	<b>159 001 606</b>	20 gm bottle quinhydrone for ORP calibration (must use pH 4.01 and/or pH 7.00 buffer solutions)
3-2759	<b>159 000 762</b>	pH/ORP system tester (adapter cable sold separately)
3-2759.391	<b>159 000 764</b>	2759 adapter cable for use with 2750 DryLoc sensor electronics
3-0700.390	<b>198 864 403</b>	pH buffer kit (1 each 4, 7, 10 pH buffer in powder form, makes 50 ml of each)
3822-7004	<b>159 001 581</b>	pH 4 buffer solution, 1 pint (473 ml) bottle
3822-7007	<b>159 001 582</b>	pH 7 buffer solution, 1 pint (473 ml) bottle
3822-7010	<b>159 001 583</b>	pH 10 buffer solution, 1 pint (473 ml) bottle
<b>Mounting</b>		
3-8050.390-1	<b>159 001 702</b>	Retaining nut replacement kit, Valox K4530
3-8050-1	<b>159 000 753</b>	Universal mount junction box
3-8050-2	<b>159 000 754</b>	Universal mount junction box w/EasyCal, use with 3-2750-1, -3, -4, -7 where 4 to 20 mA is required)
3-8052-1	<b>159 000 755</b>	3/4 inch NPT mount junction box w/EasyCal
3-9000.392-1	<b>159 000 839</b>	Liquid tight connector kit, NPT (1 connector)
3-9000.392-2	<b>159 000 841</b>	Liquid tight connector kit, PG 13.5 (1 connector)
<b>Other</b>		
5523-0322	<b>159 000 761</b>	Sensor cable (per ft), 3-cond. plus shield, 22 AWG, black/red/white (for use with 2750)
3-0252	<b>159 001 808</b>	Configuration Tool

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