

+GF+ SIGNET 2750 DryLoc™ pH/ORP Sensor Electronics

3-2750.099 (B-8/02)



Features

- S³L™ Digital Interface
- Two-wire fixed 4 to 20mA loop output
- No additional pre-amplifier required
- In-line integral mount and submersible installation versions
- Automatic Temperature Compensation (pH)
- DryLoc™ electrode connector
- Auto configuration for pH or ORP operation
- Optional EasyCal calibration aid
- Automatic buffer recognition
- Junction boxes for convenient wiring
- Compatible with 3719 pH/ORP Wet-Tap

Application

- Water/Wastewater Treatment
- Neutralization Systems
- Scrubber Control
- Effluent Monitoring
- Surface Finishing
- Flocculent Coagulation
- Heavy Metal Removal and Recovery
- Toxics Destruction
- Sanitization Systems
- Commercial Pools & Spas
- Aquatic Animal Life Support Systems

Description

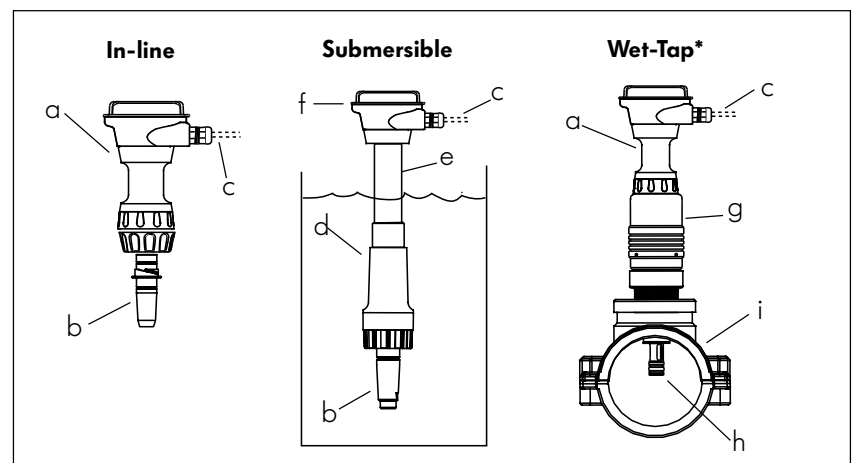
+GF+ SIGNET 2750 pH/ORP Sensors provide two-wire 4 to 20mA loop output for pH and ORP measurements, without the expense of local display and other luxuries available in full-featured transmitters. The devices self-configure for pH or ORP operation via automatic recognition of electrode type. Pre-amplification is built-in, further reducing system costs. These sophisticated sensors also provide S³L™ (Signet Sensor Serial Link) digital interface, another example of leading-

edge technology from +GF+ SIGNET. The DryLoc™ electrode connector quickly forms a robust assembly for submersible and in-line installations. NEMA 4X Junction Boxes are integral parts of the in-line version and are available as accessories for the submersible version. The optional EasyCal feature allows simple push-button calibration and includes an LED for visual feedback.

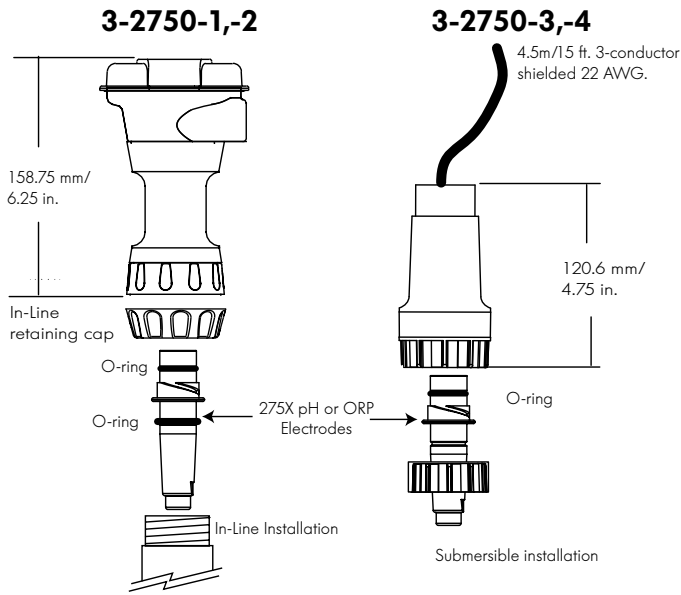
System Overview

- 2750-1, -2 Sensor Electronics
- 275x pH or ORP Electrode
- S³L™ or 4 to 20mA Output (field selectable)
- 2750-3, -4 Sensor Electronics
- Extension Pipe (customer supplied)
- 8052-1, -2 Junction Box
- 3719 pH/ORP Wet-Tap
- 275x-WT pH or ORP Electrode
- Low-profile clamp-on saddle fitting

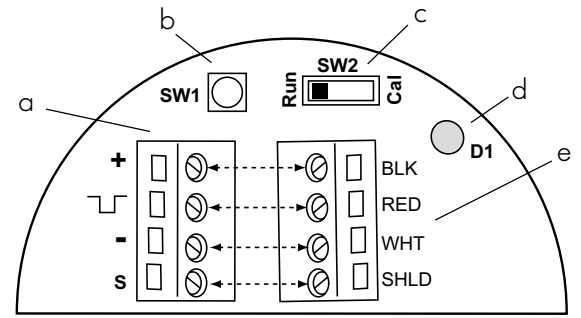
*See 3719 data sheet/catalog pages for details



Dimensions



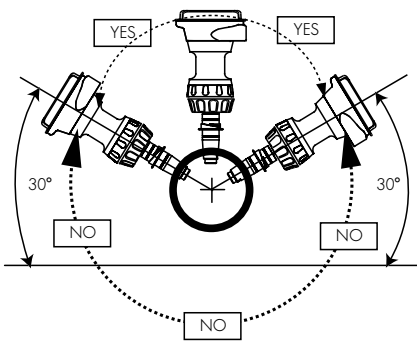
Wiring



- a) Power and 4 to 20mA or S³L™ output terminal block
- b) Push-button calibration (EasyCal option)
- c) S³L™ output interrupt (EasyCal option)
- d) LED indicator (EasyCal option)
- e) I/O terminal block to sensor electronics

Installation

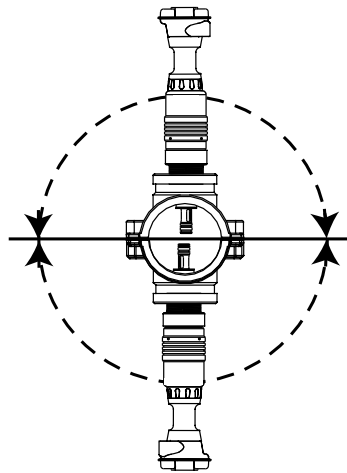
In-Line Installation (2750-1,-2)



In-Line Installation

- It is recommended to install standard electrodes vertically $\pm 60^\circ$
- Special electrodes for horizontal or inverted installation are available - contact factory.

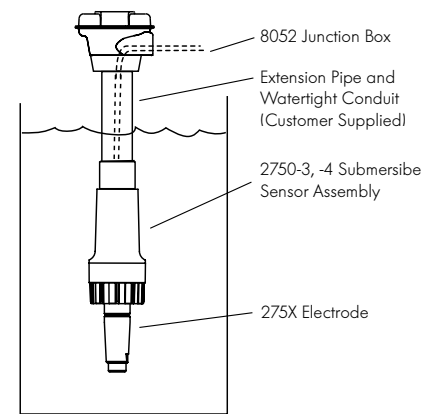
3719 Installation (2750-1,-2)



3719 Wet-Tap Installation

- Wet-Tap electrodes are suitable for installation in any orientation.

Submersible Installation (2750-3,-4)








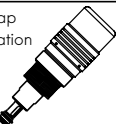


Submersible Installation

- 2.2 in. minimum opening in tank cover required to accommodate 2750 installation and removal.

Fitting Types for In-Line Installations

See +GF+ SIGNET Measurement & Instrumentation Product Catalog for a complete listing of installation fittings.

Type	Description	Type	Description
	<ul style="list-style-type: none"> • Available in 1/2 in. to 4 in. sizes • PVC, CPVC w/solvent cement socket • PVDF and PP w/union end fittings 		<ul style="list-style-type: none"> • Available in 2 in. to 4 in. sizes • Requires 1-7/16 in. hole in pipe • Install by certified welder only
	<ul style="list-style-type: none"> • Available in 2 in. to 4 in. sizes • Requires 1-7/16 in. hole in pipe 		<ul style="list-style-type: none"> • Available in 1/2 in. to 2 in. sizes • Female NPT ends
	<ul style="list-style-type: none"> • Available in 2 in. to 4 in. sizes • Requires 1-7/16 in. hole in pipe 		<ul style="list-style-type: none"> • Use for installation in pipes > 4 in. (1-1/4 in. NPT) • PVC, CPVC, or PVDF versions • Specify socket or 1-1/4 inch NPT male threads
	<ul style="list-style-type: none"> • For use with 3719 Wet-Tap installations • Available from 2.5 x 1.5 in. up to 12 in. x 2 in. • Available with ASTM or NPT threads 		<ul style="list-style-type: none"> • See 3719 Data Sheet for dimensions and installation details

Technical Data

General

Compatible Electrodes:	+GF+ SIGNET 3-275X DryLoc™ pH and ORP Electrodes +GF+ 275X-WT DryLoc™ pH and ORP Electrodes
Operational Range:	pH: 0.00 to 14.00 ORP: ± 2,000 mV Temp.: 0° C to 85° C (32 to 185°F)
Response Time*:	pH: < 6 seconds for 95% of change ORP: application dependent Temp τ : 140 seconds (2754), 196 seconds (2756) * includes response time of electrodes
Enclosure:	2750-1&2 (in-line): NEMA 4X/IP65 2750-3&4 (submersible): NEMA 6P/IP68 (with pipe extension and/or watertight conduit)
Materials:	2750-1&2 (in-line): Valox® (PBT) 2750-3&4 (submersible): CPVC
Weight:	2750-1&2 (in-line): 0.75 kg (1.65 lb) 2750-3&4 (submersible): 0.64 kg (1.41 lb)
Immunity:	EN 50082-2
Emissions:	EN 50081-1

Electrical

Cable:	4.5m/15 ft. , 3-conductor shielded 22AWG (2750-3, 2750-4)
Power:	12 to 24VDC for 4 to 20mA output 5VDC ± 5% regulated, 3mA max., for S ³ L™ output
Current output:	pH: Fixed 4 to 20mA, isolated, = 0.00 to 14.00 pH (custom scaling available) ORP: Fixed 4 to 20mA, isolated, = -1000 to 2000mV (custom scaling available from -2000 to 2000mV) Max Loop Resistance: 50 Ω max. @ 12V 325 Ω max. @ 18V 600 Ω max. @ 24V
S ³ L™ output	Accuracy: ± 32 μ A Resolution: ± 5 μ A Update Rate: 0.5 seconds Error indication: 3.6mA Serial ASCII, TTL level 9600 bps Accuracy: pH: ± 0.03 pH @ 25° C (77°F) ORP: ± 2mV @ 25° C (77°F) Resolution: pH: ≤ 0.02 pH ORP: ≤ 1mV Temp.: ≤ 0.2° C (32.3°F) Update Rate: 0.5 seconds Available Data: Raw mV, pH or ORP, temperature (pH only) Error indication: Open input diagnostic
Input Impedance, Z:	>10 ¹¹ Ω

Environmental

Operating Temp.:	0° to 85° C (32° to 185°F)
Storage Temp.:	-20° to 85° C (-4° to 185°F)
Relative Humidity:	0 to 95%, non-condensing (without electrode connected)
Enclosure Rating:	3-2750-1&2: NEMA 4X/IP65 with electrode connected 3-2750-3&4: NEMA 6P/IP68 with electrode and watertight conduit and/or extension pipe connected

Standards and Approvals

- CE
- Manufactured under ISO 9001 and ISO 14001

Ordering Information

Mfr. Part No.	Code	Description
3-2750-1	159 000 744	In-line Sensor Electronics
3-2750-2	159 000 745	In-line Sensor Electronics w/EasyCal
3-2750-3	159 000 746	Submersible Sensor Electronics with 4.5m/15 ft. cable (NPT)
3-2750-4	159 000 842	Submersible Sensor Electronics with 4.5m/15 ft. cable (ISO)
3-2754	159 000 747	Flat pH Electrode
3-2754-HF	159 000 748	Flat pH Electrode, HF Resistant
3-2755	159 000 749	Flat ORP Electrode
3-2756	159 000 750	Bulb pH Electrode
3-2756-DI	159 000 751	Bulb pH Electrode, DI Resistant
3-2757	159 000 752	Bulb ORP Electrode
3-3719-11	159 000 804	Wet-Tap Assembly, 1.5 in. NPT
3-3719-21	159 000 805	Wet-Tap Assembly, 2 in. NPT
3-3719-12	159 000 806	Wet-Tap Assembly, ISO 7/1-R 1.5
3-3719-22	159 000 807	Wet-Tap Assembly, ISO 7/1-R 2
3-2756-WT	159 000 834	DryLoc™ pH Electrode (use with 2750 pH/ORP Sensor)
3-2757-WT	159 000 835	DryLoc™ ORP Electrode (use with 2750 pH/ORP Sensor)

Accessories

Mfr. Part No.	Code	Description
3-8050-1	159 000 753	Universal Mount Junction Box
3-8050-2	159 000 754	Universal Mount Jct. Box w/EasyCal
3-8052-1	159 000 755	3/4" NPT Mount Junction Box
3-8052-2	159 000 756	3/4" NPT Mount Jct. Box w/EasyCal
3-9000.392-1	159 000 839	Liquid Tight Connector Kit, NPT (1 connector)
3-9000.392-2	159 000 841	Liquid Tight Connector Kit, PG13.5 (1 connector)
3-2759	159 000 762	pH/ORP Simulator/System Tester (adapter cable sold separately)
3-2759.391	159 000 764	2759 Adapter Cable for use w/2750 DryLoc™ Sensor Electronics
3-2759.393	159 000 765	2759 Adapter Cable for use w/2720 Twist-Lock Preamplifier
3-0700.390	198 864 403	pH Buffer Kit
P31515-0P200	159 000 630	Universal Pipe Adapter PVC
P31515-0C200	159 000 631	Universal Pipe Adapter CPVC
P31515-0V200	159 000 459	Universal Pipe Adapter PVDF

Engineering Specifications

- The sensor shall meet CE standards.
- The submersible sensor body shall be made of CPVC. The in-line assembly shall be constructed of Valox (PBT).
- The in-line sensor enclosure shall be NEMA 4X/IP65. The submersible version shall be NEMA 6P/IP68.
- The sensor shall provide a 4 to 20mA or S³L™ (Signet Sensor Serial Link) output signal.
- The sensor shall operate at a range of 0.00 to 14.00 pH or ±2,000mV ORP within a temperature range of 0 to 85°C (32 to 185°F).
- The sensor shall be compatible with +GF+ SIGNET 3-275X DryLoc™ pH and ORP Electrodes, 3-275X-WT DryLoc™ pH and ORP Electrodes, and the 3719 pH/ORP Wet-Tap.
- The sensor shall be +GF+ SIGNET, Model 2750 pH/ORP Sensor.

+GF+ SIGNET

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